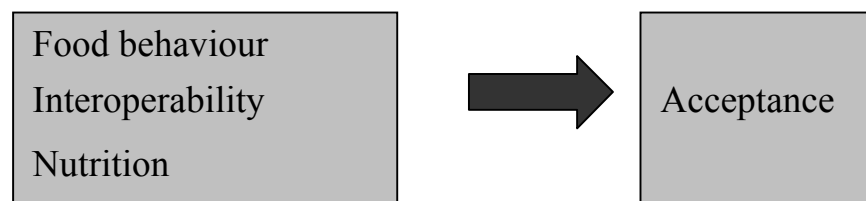


**NORWEGIAN SOLDIER'S ACCEPTANCE  
FOR  
ALLIED NATIONS' FIELD RATIONS DURING  
FIELD EXERCISE**

**Behaviour – Nutrition – Interoperability**



*Master Thesis in Food, Nutrition and Health*

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## **ABBREVIATIONS, DEFINITIONS AND TERMS**

### NATO nations

BEL - Belgium

CAN - Canada

CZE – Czech Republic

DEU - Germany (also referred to as GER)

FRA - France

GBR - United Kingdom (also referred to as UK)

GEO - Georgia

ITA - Italy

NED - Netherlands

NOR - Norway

SVN - Republic of Slovenia

USA - United States of America

### Miscellaneous Nation

AUS - Australia

### Military abbreviations

NATO - North Atlantic Treaty Organisation

RTO - Research Task Organisation

HFM - Human Factor Medicine

UN – United Nations

NRF - NATO Response Force

TMBN –Telemark battalion

FR – Field rations

CR – Combat rations

NDLO – Norwegian Defence Logistics Organisation

NCO – Non commissioned officer

Professional terms

Food neophobia - fear (or dislike) of new foods

Food neophilia - love (or enjoyment) of new foods

Field rations can be referred to as follows:

Rations

Combat rations

Operational rations<sup>1</sup>

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<sup>1</sup> Suggested by NATO STANAG 2937 (November 2010) to be the common term within the Alliance



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## **ACKNOWLEDGEMENTS**

My profession as an officer responsible for combat feeding in Norway, this master thesis has given me the opportunity to learn more about a topic that I appreciate to work with. There has not been conducted similar study's and thus, this has been a time consuming project. First, thanks to my family for keeping up with me, through this period.

A lot of people have encouraged me to conduct this study. However it couldn't be done without my employer, Norwegian Defence Logistics Organisation, and NATO RTG 154, which caused this project. TMBN made their battalion available. Oslo Airport Customs Office that allowed import with no cost in name of science, Chris Forbes-Ewan - who critically looked at my English grammar, and Dr. Gun Roos, colleges and students who have contributed to give me constructive fed back before launching the questionnaire.

Thanks to my supervisor, First Amanuensis Dr. Sverre Pettersen, who contributed with constructive feed back to my statistics when the sample decreased and thanks to bi-supervisor, Professor Halvor Holm, who guided me into the nutritional part of the Master thesis.

## SUMMARY

**Introduction.** Individual field rations are designed to be the sole source of energy and nutrients for one soldier for 24 hours. Research is needed on how well troops from one NATO nation will maintain body weight when fed with combat rations from other nations. The aim of the study was to find out to what extent Norwegian soldiers' accept allied nations' field rations during field exercise.

**Material and Methods.** In order to validate if Norwegian soldiers accept Allied nations field rations, the investigator has prepared a prospective pilot cohort study. This was a quantitative exploratory study, involving assessment of the acceptability and service suitability of international combat rations to Norwegian troops during eight days exercise. Electronically questionnaire was developed in QuestBack. Likert's 5-point scale was used (ranging from 1 = "very little" to 5 = "very much") to measure respondents' score on several items reflecting their attitudes towards the field rations. Seven nation's rations were distributed to 7 platoons. Troops ate only one nation's rations during exercise. Discard was quality accounted to validate results from the questionnaire. 178 soldiers participated in the study corresponding to a responds rate of 52 %. Three attitude constructs were primarily established by the use of reliability analysis (Coefficient Cronbach's alpha (CCA) measurement), and named *Sensorial acceptability*, *Interoperability* and *Nutrition*, respectively. These three constructs were collapsed into a fourth grand construct named *Acceptability* consisting of a total 20 items. Descriptive statistics, one-way ANOVA and effect size (Cohen's *d* and corresponding percent non-overlap between two variables' mean  $\pm$  S.D. scores) were the main statistical methods used to compare soldiers' attitudes towards the various field rations

**Results.** The field rations from USA and Slovenia received the highest scores on the *Acceptability* construct, while the French rations did not score as high among the participating Norwegian soldiers during exercise. Rations from England, Canada and Germany were all in the range of doubt, whether they can be accepted or not (construct

scores near the “neutral” middle value on the Likert’s scale). Single components of the rations may have influenced the result (low mean scores on particular construct items).

**Conclusion and implications.** Even though this study applied a rather small sample of soldiers, there might be trends and patterns that could be taken into consideration in the future regarding soldiers’ acceptability of field rations from various NATO nations. However, with a similar study conducted on a larger scale (both nationally and internationally), there might be possible to generalize results and thus learn more from aspects of this pilot study, and then perhaps be able to provide NRF forces with more acceptable rations – especially concerning some of their ingredients..

## NORSK SAMMENDRAG

**Introduksjon.** Enkelte feltrasjoner er designet for å være den eneste kilden til energi og næringsstoffer for en soldat i 24 timer. Forskning er nødvendig i forhold til hvor godt soldater fra ett NATO-land vil opprettholde kroppsvekten når de mottar feltrasjoner fra andre nasjoner. Målet med studien var å finne ut i hvilken grad norske soldatene aksepterte allierte nasjoners feltrasjoner under øvelse.

**Materiale og metode.** For å validere om norske soldater aksepterte allierte nasjoner felt rasjoner, har undersøkeren (masterstudenten) utarbeidet en prospektiv pilot-kohortstudie. Dette var en kvantitativ eksplorerende studie, som omfatter vurdering av aksept og egnethet for internasjonale feltrasjoner til norske tropper under en åtte dagers øvelse. Elektronisk spørreskjema ble utviklet i QuestBack. Likert's 5-punkts skala ble brukt (alt fra 1 = "svært lite" til 5 = "svært mye") for å måle respondentenes score på flere elementer som reflekterer deres holdninger mot feltet rasjoner. Sju nasjonens rasjoner ble distribuert til 7 tropper. Tropper spiste kun én nasjons rasjoner under trening. Kastet mat ble sortert og opptalt for å validere resultatene fra spørreskjemaet. 178 soldater deltok i studien. Dette tilsvarer en svarprosent på 52 %. Tre holdningskonstrukt ble etablert ved bruk av reliabilitetsanalyse (Koeffisient Cronbach's alfa (CCA) måling), og ble kalt *sensoriske aksept*, *Interoperabilitet* og ernæring. Disse tre konstruerer ble samlet til et fjerde storkonstrukt, *aksept*, bestående av totalt 20 elementer. Beskrivende statistikk, one-way ANOVA og effekt size (Cohen's d og tilhørende prosent non-overlap mellom to variabler, mean  $\pm$  SD score) var de viktigste statistiske metoder som brukes til å sammenligne soldaters holdninger til ulike nasjoners feltrasjoner.

**Resultater.** Feltrasjoner fra USA og Slovenia fikk høyest score på konstruktet *aksept*, mens de franske rasjonene ikke scorer så høyt blant de deltagende norske soldatene under øvelsen. Rasjoner fra England, Canada og Tyskland tilhørte alle "under tvil – sonen" hvorvidt de kan aksepteres eller ikke (konstruktenes skår i nærheten av den "nøytrale" midterste verdien på Likert's skala). Enkeltkomponenter av rasjonene kan ha påvirket resultatet (lav gjennomsnittlig skår på bestemte rasjonskomponenter).

**Konklusjon og implikasjoner.** Selv om denne studien anvender begrenset utvalg av soldater, kan det likevel være trender og mønstre som kan tas i betraktning i fremtiden, om soldatenes akseptabilitet knyttet til feltrasjoner fra de ulike NATO-landene. Dersom en tilsvarende undersøkelse gjennomføres i en større skala (både nasjonalt og internasjonalt), så kan det være mulig å generalisere resultatene og dermed lære mer om deler av denne pilotstudien. Deretter kan en kanskje kunne forpleie NRF styrker med mer akseptabel feltrasjon - spesielt med tanke på enkeltkomponenter i rasjonene.





# 1 INTRODUCTION

## 1.1 Field rations and under consumption

Individual field rations (also known as combat and/or operational rations) are designed to be the sole source of energy and nutrients for one soldier for 24 hours. A soldier will be provided with individual field rations when mission requirements or the tactical situation prevent rationing with freshly-cooked food (Baker-Fulco, Patton, Montain, & Lieberman, 2001).

In the early 1980's, the Surgeon General of the US Army stipulated that soldiers could subsist solely on their field rations for up to 10 days (Herbert L. Meiselman & Schutz, 2003). At that time the Norwegian Armed Forces had no such regulation<sup>2</sup>. Thus, Norwegian soldiers could be provided with field rations as the only food source for an indefinite period. Now the maximum allowable period for feeding Norwegian soldiers with field rations without re-supply or supplementation is set at 30 days<sup>3</sup>. Today, most NATO and alliance nations limit feeding with field rations to between 16 (AUS) and 30 days (multiple) of continuous intake (Bullock, Jones, Gilchrist, & Marshall, 2010; NATO, 2010). There has been one or very few studies comparing food intake from rations and freshly made food, but Australian combat rations (CRP) as well as fresh food was tested during a 12 days exercise (Booth, Coad, Forbes-Ewan, Thomson, & Niro, 2001). The results regarding food intake were clear; almost doubled intake of food (in calories) compared with CRP. Modern combat operations usually involve multinational forces, operating as NATO or UN forces. Most (or all) NATO nations provide their own field

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<sup>2</sup> Pers. comm. Head of Combat feeding, Norwegian Logistics Organisation, Petter M. Olsen, August 2009

<sup>3</sup> Pers. comm. Petter M. Olsen - "*Retningslinjer for Intendantur tjenesten I Forsvaret*", a directive regulating combat feeding, including field rations.

rations. To simplify the logistics of rationing troops engaged in coalition operations, a common field ration has been requested by several commanders<sup>4</sup>.

## 1.2 NATO RTO HFM Research Task Group 154

In 2006 the Human Factors and Medicine (HFM) Panel of NATO's Research and Technology Organisation established a Technical Activity Description (TAD) for an activity, whose ultimate goal was to specify a nutritionally tailored combat ration designed for all the NATO Response Force (NRF),

From Wikipedia (2009) the NRF is:

*The NATO Response Force (NRF) is a "coherent, high readiness, joint, multinational force package" of approximately 25,000 troops that is "technologically advanced, flexible, deployable, interoperable and sustainable". Its role is to act as a stand alone military force available for rapid deployment by the North Atlantic Treaty Organisation as a collective defence, crisis management or stabilisation force, or to act as an initial entry force for a subsequent primary deployment. The NRF consists of land, air and sea components provided by NATO members. Contributed forces first train together and then become available for a 6-month period before being replaced by the new force*

Further, from NATO (2010) the NRF is to be:

*...capable of deployment within five days in support of the collective will of the alliance and will be able to sustain itself for 30 days...Potential missions include non-combatant evacuation operations, humanitarian operations, and crisis response including peacekeeping, counter terrorism and embargo operations. On initial deployment of the NRF, combat rations will be issued as part of combat service support logistics in sufficient quantity to sustain the task force for a minimum 30-day period.*

Later in 2006, NATO HFM established Research Task Group (RTG) 154 to:

1. Identify emerging technologies, products, and innovations for combat feeding, nutrition, and performance enhancing components across various rations platforms (individual, group, and special purpose/assault rations) matched to Operational mission requirement of the deployed NRF.

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<sup>4</sup> Announced during CATCON, Birmingham 2006 (and later statements in NATO).

2. Develop standards for nutrition, packaging, and combat rations that support NRF deployment doctrine, mission profile, and operational flexibility to ensure nutrition, combat feeding and performance are optimized as a combat force supplier (NATO, 2010)

In summary, the basic task was to define a common standard for combat rations that could meet the requirements for a multinational involvement, such as a NRF mission.



**Figure 1:** NRF soldier with a *NRF* symbol on his uniform

RTG 154 consisted of 12 NATO nations and one “Miscellaneous” nation<sup>5</sup>. In this paper these nations are referred to as “the participating nations”. However, because one nation (GEO) does not have a combat ration, the results discussed below apply only to the combat rations of 12 nations.

As an integral aspect of this work, Wageningen University in Holland was contracted by the RTG 154 to conduct a comprehensive review of the scientific literature and produce a report detailing the recommended nutritional composition of a combat ration to support the NRF. The assumption underpinning the report included:

- (i) Only male troops will be involved, aged 18-50 years;
- (ii) Operations may continue for up to 30 days without re-supply;

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<sup>5</sup> NATO members were BEL, CAN, CZE, DEU, FRA, GBR, ITA, GEO, NLD, NOR, SVN AND USA. The Miscellaneous nation member was AUS.

- (iii) Very vigorous physical work (PAL<sup>6</sup> level of up to 2.4) may be involved; and
- (iv) The full range of possible climatic conditions must be addressed.

In addition to recommend nutritional characteristics of a combat ration to support the NRF, the Wageningen report also investigated how participating nations existing combat rations could be revised to better meet the nutritional requirements of the NRF. This report was published as Annex J in the Final Report of NATO RTG 154 (NATO, 2010)

A major problem with combat rations is that troops habitually discard a substantial proportion of their food. As a result, negative energy balance and compromised nutritional status are common when combat rations are the sole form of rationing for extended periods. A former Natick scientist and Psychologist, Dr. Herbert L. Meiselman, was contracted by the RTG 154 to provide a report on how behavioural psychology may be used to maximize intake of food from combat rations. The resulting report which is based on food cultural aspects, including food consumer statistics is the Final Report (NATO, 2010). The RTG also addressed the question of how well the current general purpose rations would meet the needs and expectations of troops from other nations. This is in the form of an “interoperability” report (NATO, 2010).

### **1.2.1 Similarities and differences in styles of cuisine in combat rations**

A NATO soldier can usually expect to be fed with his or her country’s traditional food. Main courses in the combat rations of participating nations are quite varied, reflecting the preferences of troops from each nation for their national cuisine. However, there are many common components in the participating nations’ field rations (NATO, 2010). The following items are included in at least two-thirds of the general purpose rations (with the number of combat rations including the item shown in brackets):

Chocolate or chocolate bar (10)

Sweet or oatmeal biscuits (~ cookies in the USA) (9)

Milk, “concentrated milk”, coffee whitener or coffee creamer (9)

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<sup>6</sup> PAL is physical Activity Level. This is the mean total daily energy expenditure expressed as a multiple of the basal metabolic rate.

Chewing gum (9)  
Jam, peanut butter, honey or other sweet spread (9)  
Tea (8)  
Salt (8)  
Crackers (8)  
Sugar (8)  
Chocolate drink or cocoa (8)

### **1.2.2 Interoperability - different approaches to operational rationing**

Approaches to rationing with combat rations differ between NATO nations. As mentioned above, this includes how many days soldiers may be fed with only field rations. The types of food technology differ to some nations that provide canned food while others use retort pouches. Some nations include fortified food components (i.e. with additional vitamins), some nations require light weight rations such as freeze dried food and some provide cutlery in the rations while others supply cutlery separately (NATO, 2010).

Other points of difference include intended use, ration weight/volume, pallet type (and volume), mess tin/canteen cup, specific tools (e.g. is a can-opener required and if so, is one provided as a ration component or separately), heating device/fuel, water treatment (e.g. are water disinfection tablets provided?), separate bag for waste, language labelling, metric vs. non-metric units and water requirements (NATO, 2010). All these issues will influence the interoperability of each nation's combat ration with the soldiers of other nations. The context of military feeding with focus on "type of convenience" and "timing of convenience" is described (Jaeger & Cardello, 2007). These authors recommend more research on the field situation, due to the different context in field vs. institution or restaurant.

### **1.2.3 Food behaviour - Non nutritional aspects, different food culture**

As mentioned previously, Herbert L. Meiselman was contracted by the RTG to provide a report on non-nutritional (food behavioural) characteristics that are likely to increase or decrease consumption of combat rations. Food behavioural aspects or non-nutritional aspects are of great interest. A soldier's judgement (like or dislike) is a critical determinant

of whether the ration will be largely eaten or discarded. A soldier's expectation could sometimes be more important than the actual taste (H. L. Meiselman, 2009). Issues such as differences in food availability can have varying influences on acceptability depending on the context. For example, a soldier whose nation's combat ration has only a small number of menus may regard a slight increase in menu availability highly favourably, while a soldier who is accustomed to a large range of menus may respond unfavourably to even a small reduction in the range of available menus (H. L. Meiselman, 2009) .

Food culture, meal size and other aspects that can enhance or depress eating will be discussed in this chapter. Another issue that may have an impact on a soldier's food acceptance is the meals context and the soldiers (consumers) ability to choose (King, Meiselman, Hottenstein, Work, & Cronk, 2007).

In a recent study, food neophobics were compared with neophilic subjects in a product test (Henriques, King, & Meiselman, 2009). The study was conducted to investigate if psychological characteristics - such as neophobia versus neophilia - are also important in determining food likes and dislikes. In most previous studies, non-psychological variables such as demographic factors were chosen as the major basis for investigating differences in food acceptability between groups. The study showed significant differences in acceptance between the neophobics and neophilic groups.

#### **1.2.4 Consumers choice**

A lot of factors influence the consumer's choice. Everything from taste and texture to demographical and socioeconomically aspects (Rees, 1992). Rees mention the great changes in food behaviour after microwave ovens entering households.

#### **1.2.5 Food acceptance (test) aspects**

Most of the participating NATO RTG 154 nations conduct food acceptance tests with troops of their nation to determine the acceptability and consumption rates of combat rations. Except that Belgium that uses French combat rations, there is no record in the literature reviewed for this thesis of any field test where a group of soldiers have been supplied with the rations of one or more foreign nations.

A review by (Prescott, 1997) of food choice, acceptance and consumption confirms that, consistent with the conclusions of (King, Meiselman, & Henriques, 2008) being given a choice greatly increases food acceptance and consumption. However, there is less information on what happens to acceptability and consumption when the problem is transferred across borders. Consistent with the prevailing belief that greater choice promotes acceptability and consumption, there is anecdotal (but not documented) evidence that Norwegian soldiers may prefer UK, CAN and USA rations to NOR rations. If so, this could be because these nations provide greater menu variety (18–26 menus, versus 8 menus for each of NOR FR3800 Tropical and FR3800 Arctic rations) (NATO, 2010). In turn, the greater variety available in the rations of these nations may simply reflect the experience of the populations of those nations—there are about twice as many types of food available in a typical food mart in the UK, GER, FRA, CAN or USA as in a typical NOR food mart (King, et al., 2008). Conversely, NOR soldiers may be expected to find SVN rations to have relatively low acceptability (the SVN combat ration provides only three menu choices).

Another study (Pieniak, Verbeke, Vanhonacker, Guerrero, & Hersleth, 2009) identifies other aspects as being among the main drivers for food consumption. Factors such as familiarity, traditional food and ‘naturalness’, are seen to be of major importance. (Cervellon & Dubé, 2005) conducted a study on expected cross-cultural differences between French and Chinese consumers. They concluded that there may be differences between these two nationalities regarding their own opinion about traditional food. Moving (permanently) to the other country seems to have different affects on the food behaviour of members of each nationality.

### **1.2.6 Nutrition - different recommendations in NATO countries**

Research has consistently shown that soldiers discard a substantial proportion of the food available in their combat rations; e.g. (Herbert L. Meiselman & Schutz, 2003) reported that only 2400 kcal (67 % ) was consumed of the 3600 kcal available, while (Friedl & Hoyt, 1997) found that about 75 % of the available food was consumed. The energy requirement of an average NRF soldier (175 cm tall and weighing 79 kg) is up to 4900 kcal, based on

the worst case scenario (Sluik, De Graaf, De Groot, & Cavelaars, 2008). Consuming 2400 kcal means that only ~50 % of the energy requirement would be met in the worst case NRF situation.

In one study it was reported substantial and rapid weight loss (2-5 % of body weight in 24 - 48 hours) caused by under consumption (Mariott, 1995). There are probably other (military) studies who confirm the same, but this has not been made available by now. Although it's clear that there is a highly significant correlation between acceptance and intake, lack of variety will quickly lead to decline in consumption, even if the foods have very high initial acceptability (H. L. Meiselman, deGraaf, & Leshner, 2000). Effects on negative energy balance on military activity, shows little or any evidence in reduced performance and a loss (rapid 5 days or gradually 3 weeks) of 5 % body weight (Booth, et al., 2001; Fogelholm, Koskinen, Laakso, Rankinen, & Ruukonen, 1993). However, dehydration – which causes loss of bodyweight, may influence performance.

RTG 154 reported a wide range of nutritional recommendations among member nations. Differences were found in recommended intake for both micronutrients and macronutrients. However, these differences are reduced when supplementary packs are taken into account, depending on activity level or climate zones (NATO, 2010)

As previously mentioned, under a contract to NATO RTG 154, a comprehensive review of the scientific literature on military and sports nutrition was conducted by the University of Wageningen (Sluik, et al., 2008). RTG 154 provided the underlying assumptions and background papers, and also constructive criticism of the first draft of the Wageningen report. The final Wageningen report to RTG 154 included recommended nutrient intakes for NRF operations (both “normal” and “combat”), and also recommended nutritional standards for an NRF combat ration, based on requirements for combat operations (NATO, 2010).

### **1.3 Feasibility of an NRF combat ration**

Initially, RTG 154 considered attempting to develop an “NRF combat ration” that could be made available to all troops in the NRF, regardless of their national origin. However, it was concluded that designing one universal combat ration that suits all NATO forces was too



great a challenge. Consequently, RTG 154 focused on developing nutritional recommendations for combat rations that would support the NRF, and investigated how well existing rations of participant's nations meet those recommendations. Advice was also given on how participating nations' combat rations could be revised to better meet the needs of the NRF (NATO, 2010)

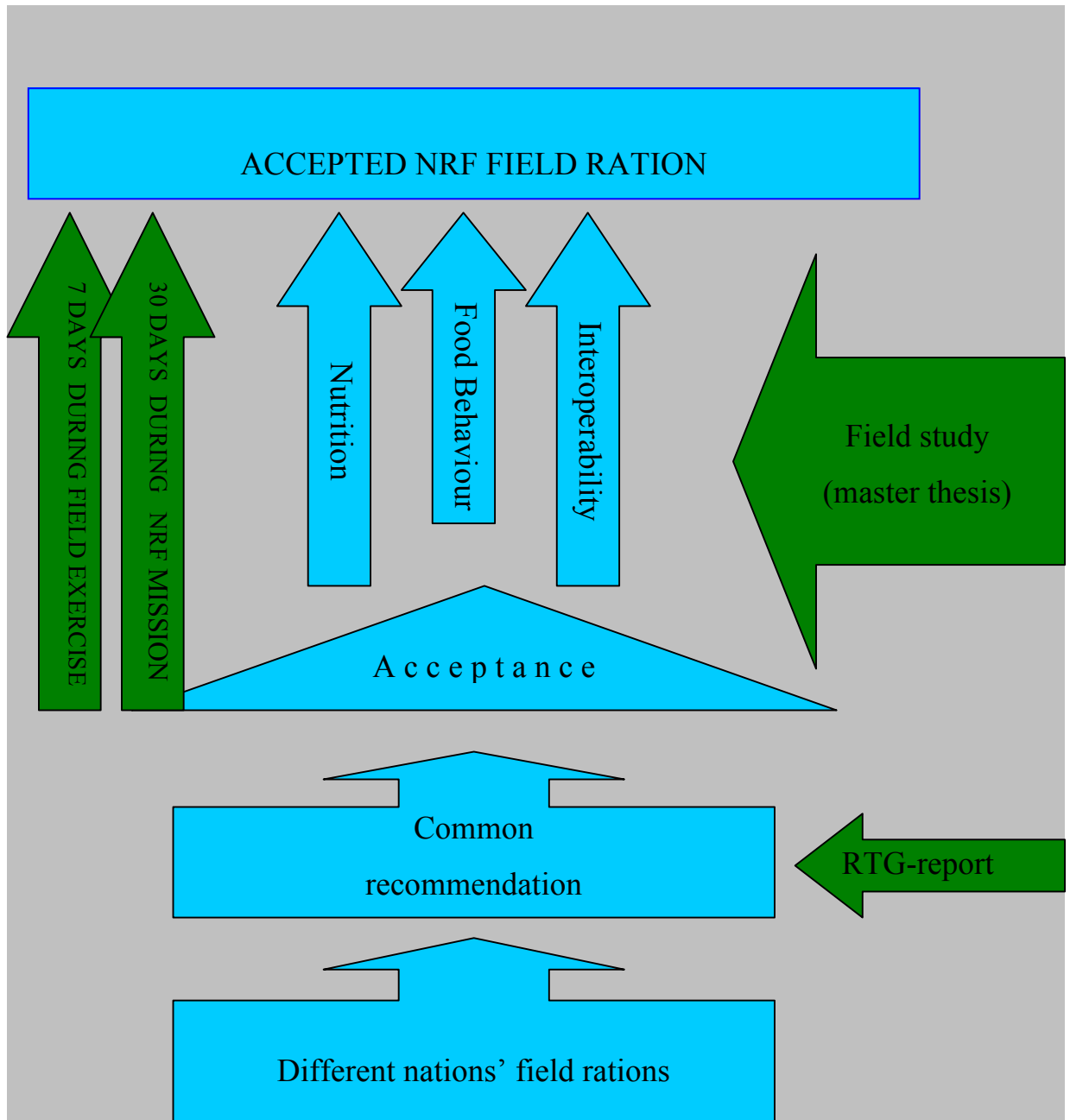
#### **1.4 Field study as a master thesis**

As mentioned above, designing a possible future common combat ration was considered by RTG 154 to be too great a challenge. This raises the question “how acceptable to each nation would another nations' combat ration be; that is, how strong is the potential for interoperability as well as sensorial aspects with respect to the Alliance nations' combat rations?”

As head of Norwegian Armed Forces combat feeding program<sup>7</sup>, I had the opportunity to conduct a field study, to determine the potential for interoperability of six NATO nations' combat rations with Norwegian professional soldiers during Exercise “Ymer the Viking” in November 2009. Figure 1 is a schematic representation of the basic of this master thesis, that different nations' combat (field) rations would be compared with the RTG 154 recommendations for nutritional quality; a field study of their acceptability to Norwegian soldiers would be conducted over eight days to investigate the effects of each ration on food intake (“food behaviour”) and nutritional status (“nutrition”) and therefore the interoperability of each ration for Norwegian soldiers. From these results, the primary characteristics of a possible NRF field ration may be determined.

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<sup>7</sup> Regulations, development, specifications and procurement of field rations



**Figure 2:** *Acceptance of allied nation's field rations, a self-made model.*

Figure 1 illustrates that a common recommendations depends on several aspects; time exposed by rations, interoperability, food behaviour and nutrition.

Allied nations train together in peace time and operate together in operational theatres. Soldiers are exposed to each other's feeding concept in garrison as well as in theatre. To provide sufficient variety to satisfy troops from one other nation for one week seems difficult enough. To successfully provide a multinational force with sufficient and varied

field rations for 30 days, as originally considered by RTG 154 (NATO, 2010), would appear to be extremely difficult. It has the potential to lead to severe problems caused by soldiers not eating enough to maintain the required physical and cognitive performance. This is due to possible lack of acceptance caused by food behavioural and/or interoperability aspects. An extensive period of under nourishment (such as 30 days) while engaged in very vigorous physical activity (up to 4900 kcal energy expenditure per day) will almost certainly result in sub-optimal performance. This could have fatal consequences in combat. As mentioned in section 1.1, there is strong evidence that soldiers lose weight in theatre, even when eating their own nation's combat rations. Research is needed on how well troops from one NATO nation will maintain body weight when fed with combat rations from other nations.

#### **1.4.2 Aims and research questions**

NATO requires that multinational forces like NRF should be provided by one common combat ration or at least one common specification on such rations. The specific aim in the present study was to determine:

*To what extent do Norwegian soldiers' accept allied nations' field rations during field exercise?*

The following research questions were addressed:

1. To what extent do Norwegian soldiers sensorial accept different nation's field rations?
2. To what extent do Norwegian soldiers find interoperability aspects provided in the different nations' field rations?
3. To what extent do Norwegian soldiers find nutritional aspects provided (or trusted) in the different nation's field rations?
4. What ingredients of the various nations' food rations do the Norwegian soldiers find the most acceptable?



## **2 MATERIALS AND METHODS**

In order to validate if Norwegian soldiers accept Allied nations field rations, the investigator has prepared a prospective pilot cohort study. This was a quantitative exploratory study, involving assessment of the acceptability and service suitability of international combat rations to Norwegian troops. Some methodological analysis will be described but not used in this master thesis. The intention of the Master thesis is to make a template or a recipe to Allied nations, who might find interest in repeating this study to their own soldiers, but in larger scale (i.e. which can be realised in Norway as well) to meet the statistical requirements.

A questionnaire survey was conducted to obtain quantitative data on soldiers' opinions about ration likes and dislikes, and discarded (or partially eaten) ration items were collected to provide quantitative data on consumption rates. Some qualitative data through open questions in the questionnaire will be used partly in the result chapter as well as in the discussion chapter. The questionnaire included a total of 146 questions (including sub-questions). Between 17 and 19 unique questions was addressed to seven different platoons that were provided with Allied nations field rations (including Norwegian rations). Thus, a total of 25 questions were made for all participants in the corresponding seven platoons.

### **2.1 Data collection**

The study cohort of volunteers consisted of members of the Telemark Battalion (TMBN), which has been part of the NATO Response Force (NRF) since 10 January 2007 (Wikipedia, 2010). Apart from Special Forces, TMBN are the only unit of professional soldiers in the Norwegian Armed Forces. They train with the purpose of providing NRF commanders with Norwegian troops if and when required. Seven platoons with up to 173 soldiers were available to take part in this field study, which was conducted in the area of Rena and Hamar, 170 km North-East of Oslo in November 2009, during weeks 47 and 48. During this period the members of TMBN undertook training for a typical NRF mission in

the form of Exercise “Ymer the Viking”<sup>8</sup> (Forces, 2008), that included more than 1400 soldiers. TMBN provided seven platoons of between 16 and 44 soldiers per platoon. Most participants were crew members of battle tanks or other armoured vehicles. Only a minority of the cohort was infantry soldiers, but they also belonged to a vehicle.

## 2.2 Allied nations’ rations assessed

All twelve RTG 154 countries were requested to provide their 24-hour general purpose combat ration for investigation of acceptability and service suitability to Norwegian troops engaged in a field exercise. Norwegian Defence Logistics Organisation (NDLO) could not fund the costs involved in purchasing foreign combat rations, so the only rations that could be assessed were those provided free-of-charge. Combat rations were obtained from six NATO nations - Canada, United States of America (USA), United Kingdom, Belgium (which uses French rations) Germany and Slovenia (with NDLO funding the transport of German and Slovenian rations to Norway). In addition, Norwegian combat rations were available as a control, so the total number of 24-hour combat rations available for assessment was seven.

The number of rations available from each nation is shown in Table 1.

**Table 1:** *Allied nations’ field rations provided for the study*

<b>Nation</b>	<b>Number of 24-hour rations</b>
Germany	264
Republic of Slovenia	260
United Kingdom	250
Canada	260
France	288
USA	248
Norway	300

## 2.3 Questionnaire Development

The questionnaire was similar to those used in previous field studies of the acceptability of Norwegian combat rations to Norwegian troops, but was based on questions provided by

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<sup>8</sup> TMBN is known for its Viking culture.

Allied nations, (Johnsen & Kramer, 2007) as well as the survey questionnaire designed by two analysis bureaus (Opinion, 2008) (Ipsos, 2008). Some changes were necessary to the wording of the questionnaire because of the different menus, components and supplements available in allied nations' rations. The questionnaire also included questions on whether soldiers had previous experience with, or knowledge of each Allied nation's combat rations. These questions were added to determine whether there was any possible prejudice influencing troops' ratings of the rations. In addition, the questionnaire included questions on demographic characteristics of the study cohort, as well as aspects regarding level of interest in food, health and training habits that might influence their acceptance of Allied nations' rations.

#### **2.4 Study Protocol**

With seven nations' rations and seven platoons available, the intention was to issue the rations of each nation to just one platoon, with each platoon member taking part in the study. However, platoons numbered up to soldiers 44 in a troop, everyone in a platoon could not be provided with study rations. Due to the limited amount of available rations, a cohort of soldiers in each platoon was randomly requested by commanders to volunteer as participants. Thus, on average approximately half of each platoon (up to the nearest full vehicle) was requested to volunteer. Participating members within each platoon were briefed about the purpose of the study, and were then provided with one nation's rations for 10 days. TMBN command recommended a distribution plan influenced by the fact that two platoons had recently been rationed with US MRE's and German field rations. As a result, these two platoons were not included in the randomized distribution plan and were provided with two of the remaining five rations. This was based on strategic selection (Johannessen, Tufte, & Kristoffersen, 2008).

A platoon consists of several vehicles, and the distribution plan was based on providing the same rations to all personnel on the one vehicle. Because the platoons were physically separated, there was little risk of sharing rations across sub-groups. If there was any contact with vehicles from other platoons, participants were requested not to share rations between platoons. This was monitored (by the investigator and also by platoon sergeants). Sharing rations was not an issue.

No foods other than the provided field rations were allowed, so troops' perceptions of the rations were not influenced by exposure to foods they had selected (and therefore may be expected to prefer).

All ration discards were collected and recorded. The extent of consumption was estimated visually according to the approximate fraction of the ration that remained uneaten, ranging from zero ('nothing eaten') through a quarter, one third, one half, two third, three quarters and 'all eaten (1/1. Data from "nothing eaten" and "all eaten" were accurate. Table 2 provides an illustration (not an actual result) of how discards were recorded. There was one Table for each nation's ration. In Figure 3, the discard from the American rations is treated.



**Figure 3:** *The investigator doing quality accounting of discard from the platoon provided with American rations.*

In Table 2, the table used for treating the discard is showed.



**Table 2:** How ration discard were sorted and documented

<b>Nation X</b> <b>Product – what’s left?</b>	<b>Nothing eaten</b>	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	<b>1/3<sup>rd</sup></b>	<b>2/3<sup>rd</sup></b>	<b>All eaten</b>
Mashed potato	X				X		
Energy bar						X	
Chocolate							X
Tuna		X					

This was also a validity test, comparing to what extent troops claimed they consumed a product (i.e. on their questionnaire) with their actual food intake. There might be some evidence from the scientific literature that soldiers tend to be less accurate when recording what they actually eat, but this doesn’t seem available for public release yet<sup>9</sup>.

## 2.5 Logistics and distributed responsibility

Re-supply of field rations was planned to occur approximately every third day. To maximize efficiency (and minimize disruption to the operation), discards were planned to be collected with the same frequency and at the same time as delivery of rations. Combat Service Support (CSS) battalion agreed to accept responsibility for delivering the rations as well as collecting discards. Supply points were established, and CSS delegated the delivery to one soldier and the collection of discards to another soldier. These soldiers were fully briefed on the importance of providing the correct ration to each platoon. Delivery and collection could occur at any convenient time (day or night) and, to accommodate operational requirements, deviation from the three-day schedule could occur. Also because of operational considerations, discards were measured on a platoon level and not at an individual level. Platoons or groups were identified according to the nation whose ration they received (e.g. ‘Germany’ platoon received only German 24-hour combat rations). Containers labelled with the relevant nation’s name were provided to each platoon for collection of discards.

<sup>9</sup> People who want to lose weight tend to do the same.

From Table 2, each Allied nation was able to provide at least 240 units of their 24-hour field rations. During Exercise “Ymer the Viking”, groups of 20–30 soldiers received each nation’s rations. Table 3 shows the planned distribution of each nation’s rations.

**Table 3:** *Planned distribution of field rations during field exercise “Ymer the Viking” during the period 18–27 November, 2009*

<b>Nation</b>	<b>Respondents</b>	<b>Available rations</b>
France	28	287
Germany	26	263
Canada	25	259
Slovenia	25	259
England	25	250
USA	24	248
Norway	25	250

From Table 3, the number of available rations differed among nations, with a maximum of 287 rations from France and a minimum of 248 rations from USA. Differences are due to pallet size (i.e. the total number of rations on each pallet).

### **2.5.1 Information and guidance about and during the study – pre brief**

It was essential that TMBN staff and soldiers were briefed properly about the importance of this study and their roles in ensuring its success. To achieve this, it was important that the briefing of participants take place by commanders (or other officers). Administrative officers, NCOs<sup>10</sup> and other responsible personnel were briefed by the investigator about the background, aim and practicalities of the study. It was stressed that Allied nations’ rations were to replace Norwegian rations for the eight-day study period. Fresh food supplies or snacks during the period field exercise were prohibited<sup>11</sup>. However, a family

<sup>10</sup> NCO - Non-commissioned officer or Petty officer or sub-officer (i.e. unlisted, military member holding a position of authority. In Norwegian the term is “vervet”).

<sup>11</sup> During an exercise soldiers can usually choose to supplement their combat rations with self-provided foods. During this trial they were told to eat nothing but field rations, but it was later discovered that some troops had access to other food sources as well.

day with a barbeque was planned for the first Sunday of the exercise. To ensure that morale was not adversely affected (and therefore that troops would be more likely to adhere to the requirements of the study), consumption of hot dogs and mineral water was allowed at this family day.

### **2.5.2 Investigator's activities in the field**

It was planned that the investigator would be present at the first and second distribution points within the exercise area. He was also to be available when containers with discards were ready for collection, approximately every third day. It was made clear that the investigator was to be contacted if any deviation happened and that he was available at any time for this.

Electronic questionnaire made in the Software programme, QuestBack<sup>12</sup>, was sent staff members in TMBN first week after the exercise. They provided the internal distribution of the quest and were available to the participating soldiers.

### **2.5.3 Variable re-coding**

#### *QuestBack to SPSS*

A set of complex questions was put in to "single and multiselect matrix". Adapting this in to SPSS caused errors in the data set, and more than 500 variables had to be recoded. Question 2: "If you eat food at restaurants abroad, what is the extent to which you select the following?" had nine variables. All nine with (Likert's 5-point) came up with a total of 45 new variables. Only one out of five values came out. Re-coding of the same variable was used to collect possible values (1-5) in to each variable (Pallant, 2007).

#### *Socio-Demographical variables*

Respondents were asked for age, height and weight. All three were continuous variables. "Age" was re-coded in to three groups; 19–23, 24–27 and 28 or more. Another question that respondents were asked was where they spent their adolescence. There were four alternative categories "village", "small town", "middle size town" and "big town". Due to

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<sup>12</sup> Questback is a soft ware program that provides electronically questionnaires. [www.questback.no](http://www.questback.no)

distribution, this was re-coded into two dichotomies variables, “urban” (“middle size” and “big town”) and “rural” (“village” and “small town”).

### *Dependent variables*

The same number of respondents received each of the seven nations’ rations. Thus, unique dependent variables from questions such as “To what extent did you like the following lunch and dinner courses?” were ranked by popularity as well as non-popularity. Questions about other dependent variables, such as “To what extent did you like the following item-group in the ration?” were asked for breakfast, lunch, dinner, spreads and snacks, drinks etc.?” These were common regardless of the nation. The same problem as before occurred here, and “re-code in to same variable” was used to collect belonging values (1-5) in to each variable (as in sub chapter “Questback to SPSS”).

## **2.6 Statistical analysis of data**

Data received from respondents in QuestBack was transferred into Statistical Package for the Social Sciences (SPSS) version 14.0<sup>13</sup> for Windows, which was used for statistical analysis of data. To strengthen the reliability of results, the data matrix was first checked for errors by looking for values that fell outside the possible values for each variable, and the number of missing answers were realistic (Johannessen, 2008). This was done by frequency analysis for all of the variables. Due to possible and intended factor analysis, a check was made that the values had a logical division.

### **2.6.1 Statistical analysis**

#### *Frequencies*

First, data was collated based on frequencies: gender, age, demographics and distribution from the different nations’ rations. The continuous variable "age" was re-coded to “age groups”.

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<sup>13</sup> Ended up to be version 18 after summer 2010.

### *Chi-square*

There is said (but not scientifically proven) that there are substantially more soldiers from rural than from urban areas in the Norwegian Armed Forces and especially among the professional soldiers. A chi-square test was conducted to determine whether the variables “demographics” and “nations’ rations” were distributed evenly. If so, I will provide a chi-square test to find out possible significant correlation between demographics and ration acceptance.

### *Factor analyses*

In attitude analyses the factor analysis can improve the statistical level of the results (Johannessen, 2008). However, not all data materials are suitable for factor analysis. It is theoretically possible that the measurement variables used in fact constitute a measurement scale for a term (which may prove to be compiled). The empirical work on any data media should start by identifying highly divergent observations ("outliers"), and a decision made on whether these should be retained, rejected, or whether they require modified methods of analysis (Johannessen, 2008).

The most commonly used utility to check the internal consistency is *Coefficient Cronbach's alpha (CCA)*, which can be calculated in several relevant statistics programs. Cronbach's alpha is almost always a number between 0 and 1. A “rule of thumb” is that values above 0.70 are satisfactory, and above 0.80 very satisfactory. This must be taken only as a guide - for example, 0.71 is not substantially better than 0.69. Before calculating Cronbach's alpha, a check was made that all links went the right way (or direction) in relation to the concept (Ringdal, 2007).

After conducting the "outlier" analysis a validation should be made specifically for target factor analysis. There are several diagnostic tools available for this. A widely used aid is the Kaiser-Meyer-Olkin measure (KMO) of the so-called "sampling adequacy." A high value of KMO is an indication that the measurement variable is valid and that factor analysis is acceptable. KMO values above 0.800 are generally considered as good, values between 0.700 and 0.800 are fair, while KMO values of 0.600 and below indicate that the data is not suitable for factor analysis. KMO can be calculated both for all measured variables as a whole and for each measurement variable. Change variable with particularly

low KMO should be considered for deletion, and then KMO should be recalculated for the remaining measured variables. Another widely used aid is Bartlett's test observer. This was the aid used in this study. A significant value of this indicates that there are enough consistently high correlations between measured variables that the underlying factors.

#### *Regression analyse (as a recipe or a model for future research)*

The investigator could exam with regression analysis how one dependent variable can be explained by one or more independent variables (Johannessen, 2008). In this study the independent variables "age" and "demographics" were chosen. The independent and recoded variable "acceptance" will contribute to explaining the dependent variables. However, due to limited sample, the results from SPSS might be less valid than the intention. Due to this master thesis goal; to make a model for further research within this area, a sub-chapter including the value of using regression analysis in studies like this, is kept here.

### **2.6.2 Effect size (Cohen's d) and % non- overlap**

*Effect size* (Cohen's d) is often used to measure differences between means of two groups (as a descriptive measurement), i.e. platoons in the present study (Cohen, 1988). In this thesis it was used to illustrate differences in means between rations ranked the highest vs. the other rations. By using the *effect size* calculator (Becker, 2010)<sup>14</sup>, it was possible to see the strength (as % *non-overlap*) of the difference between the Allied nations rations means. The difference is called percentage non-overlap percent (Cohen, 1988).

### **2.6.3 Descriptive statistics**

Descriptive statistics is primarily to give a characterization of the selection, but also to check whether the variables either change or keep their assumptions for the more thorough statistical analysis that can be planned for use in the following analysis (Johannessen, 2008).

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<sup>14</sup> Effect size calculator is available on the Internet, <http://www.uccs.edu/~faculty/lbecker/>

Non-parametric statistics can be used if selection was random and observations are independent of each other, the categories are mutually exclusive, and respondents have no opportunity to influence each other (Johannessen, 2008). These requirements are fulfilled and thus used in this study.

#### **2.6.4 Satisfaction ratings**

Satisfaction rating for food can be better predicted from a combination of the expected liking of the food, its appropriateness for the eating situation and the consumer's preferences, rated by like or dislike (Hui, 2006). In this study, questions were chosen to determine like/dislike as well as aspects such as appearance and perceived nutritional value, exemplified by following questions:

*“To what extent did you like the Allied nations ration breakfast?”*

*“To what extent did the Allied nation's rations appearance contribute to your food intake?”*

*To what extent do you believe that your nutritional need was provided in relation to "good taste"?*

According to Annex 4, each ration contained from approximately 15 to more than 30 components (NATO, 2010), and every component or a group of components (item-group) was assessed by a group of questions. Initially the questions started with: *“From your experience, eating NN ration during this exercise, to what extent did you find this ration acceptable compared with Norwegian rations?”* To obtain detailed information about each component, questions were asked such as: *“To what extent did you like the lunch?”*. Likert's 5-point scale was used in the questionnaire.

## **2.7 Changes in available area for trial**

Several weeks before start up, Telemark Battalion (TMBN), accepted the scientific frames for the survey, and a dedicated assistant S4<sup>15</sup> was made available for all practical issues regarding the trial during the exercise. A pre-brief was provided by the investigator to officers who were responsible for different aspects of the exercise. These were aspects such as distribution of rations, collection of discards and garbage, and management of the electronic questionnaire, provided with the software program QuestBack.

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<sup>15</sup> S4 is the military term for logistical officer.



### 3 RESULTS

Of the 178 soldiers who were provided with either Allied nations' or Norwegian combat rations for eight days during a field exercise, 93 soldiers completed the questionnaire, which gives a response rate of 52 %.

The following sub-sections describe the descriptive statistics, the characteristics of the cohort of troops (described as 'the sample') and their background, such as demographics and age.

#### 3.1.1 Gender, age, smoking habits and BMI

Mean age of respondents was  $25 \pm 5$  years, with a range of 19-45 years and mode of 22 years. There were only 8 females out of 93 soldiers in this survey, and 8 out of 93 soldiers smoked.

The mean height was  $180 \pm 6$  centimetres meters and the mean body mass was  $82 \pm 10$ .kg, giving a mean Body Mass Index (BMI) of  $25.26 \pm 2.70$ . According to WHO, a normal BMI range is from 18.50 to 24.99, and overweight (pre-obese) BMI range is from 25.0 to 29.99 (WHO, 2010). A "standard" NATO soldier has previously been assumed to be 1.75 meters tall and to have body mass of 79 kg (NATO, 2010). A TMBN soldier is therefore 3 kg (4 %) heavier and 6 cm (3%) taller than the assumed standard NATO soldier. Table 4 shows the number of respondents in each of three age ranges, together with the percentage contribution to the total number of valid responses from each age group.

**Table 4:** *Sample categorized according to three age groups (N=93) and percentage of contribution by each age group to the total number of valid responses*

<b>Age groups (years)</b>	<b>Frequency</b>	<b>Valid Percent</b>
19 – 22 years	40	43
23 – 25 years	27	29
26 - 45 years	26	28
Total	93	100

From Table 4, the group of soldiers with age between 19 and 22 years is almost double the number in either of the other two groups.

### 3.2 Sample descriptive

Table 5 shows the number of each nation's rations issued to troops for consumption over the following eight days, the number of troops who participated, the number of troops completed the questionnaire ('Respondents') and response rate.

**Table 5:** *Number of participants, number of rations issued, number of respondents, and percentage response rate.*

<b>Nation's rations</b>	<b>Participants</b>	<b>Rations issued</b>	<b>Respondents</b>	<b>Response rate (%)</b>
Germany	26	264	17	65
Slovenia	25	260	11	44
France	28	250	17	61
United Kingdom	25	260	11	44
USA	24	288	15	63
Canada	25	248	14	56
Norway	25	300	8	32

From Table 5, three platoons had lower than 50 percent response rate on the questionnaire. The platoon provided with Norwegian rations had the lowest response rate with 32%. The platoon provided with German rations had the highest response rate (65%).

In Table 6, the origin (urban or rural) of each sub-group of participants is presented with sub-groups based on the Allied nation's rations they were issued.

**Table 6:** *Sample demographics for seven platoons with corresponding rations, split into rural and urban background (N=93)*

<b>Nations rations</b>	<b>Respondents (n)</b>	<b>Rural <math>\pm</math> S.D. (%)</b>	<b>Urban <math>\pm</math> S.D. (%)</b>
France	17	59 $\pm$ 8	41 $\pm$ 8
Germany	17	47 $\pm$ 20	53 $\pm$ 20
Canada	14	83 $\pm$ 16	17 $\pm$ 16
Slovenia	11	58 $\pm$ 9	42 $\pm$ 9
England	11	79 $\pm$ 12	21 $\pm$ 12
USA	15	64 $\pm$ 3	36 $\pm$ 3
Norway	8	78 $\pm$ 11	22 $\pm$ 11
<b>MEAN</b>		<b>67 <math>\pm</math> 11</b>	<b>33 <math>\pm</math> 11</b>

In total, 67 % of the sample came from rural areas and 33 $\pm$ 11 % from urban areas. From Table 6, the three platoons provided with rations from Canada, England and Norway had more respondents from rural than urban areas. Only the platoon provided with German rations had more soldiers from urban than rural areas. All platoons were provided with different nation's rations (i.e. 8 to 17 respondents were provided with only one Allied nations rations). There was not found any correlations between rural/urban and food behaviour patterns, but 93 % of the sample claimed to be interested in food and to test new food.

### **3.2.1 Prior experience with foreign combat rations**

55 % of respondents had previously tried two or more of the foreign rations used in this study. Those rations that had most commonly been eaten were the German and American rations. Others that had previously been eaten were those of Britain, Canada France and Slovenia. In addition, many troops had experienced combat rations from nations other than those trialled in this study - the Netherlands, Finland, Sweden, Denmark, Afghanistan, Hungary and Italy. The nations whose combat rations this cohort had least exposure to were Afghanistan and Hungary. 27 % of respondents had no previous experience with any foreign rations.

### **3.2.2 Attitudes to eating the entire ration during field exercise**

The spread of opinions about the importance of eating the entire ration during the exercise is shown in Table 7.

**Table 7:** Soldier's belief about the importance of eating the whole ration during field exercise (N=93)

<b>Importance</b>	<b>N</b>	<b>Valid percent</b>
Very	47	50
Neutral	24	26
Less	22	24

As shown in Table 7, nearly half the respondents believed that eating the whole ration during a field exercise is very important. In table 8, rations issued and consumed are presented. Average consumption means a soldier's actual average intake of rations during the exercise.

**Table 8:** Rations issued, consumed in total and average consumption each soldier during the exercise "Ymer the Viking" (N=178).

<b>Nation</b>	<b>Respondents</b>	<b>Rations issued</b>	<b>Leftovers</b>	<b>Consumed</b>	<b>Average consumption</b>
France	28	287	62	225	8
Germany	26	263	97	166	6,3
Canada	25	259	70	189	7,6
Slovenia	25	259	59	200	8
England	25	250	90	160	6,4
USA	24	248	24	224	9,3
Norway	25	250		Not valid <sup>16</sup>	
Total	178	1566	402	1164	7,6*

\*mean average consumption and not total

From Table 8, the column labelled *average consumption*; it appears that there is a large difference in ration consumption between the different platoons. According to TMBN staff, this could be caused by differences between the platoons in the type of work conducted and missions undertaken during this exercise.

Table 9 shows the energy (in calories) available from each of the rations, the number of troops who were issued each ration, the number of consumed rations and the mean daily caloric intake (calculated for each nation's ration as the product of the energy available from the ration and the number of consumed rations, divided by the number of 'man-days' of rations issued - e.g. for France, 28 troops received rations for 8 days, so the total caloric

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<sup>16</sup> The platoon provided with NOR rations did not follow instructions regarding rations discard, and accurate numbers of *leftovers* and *consumed* were not available.

intake (3200 x 225) was divided by 28 and then divided by 8 (days) to determine mean daily intake.

**Table 9:** Calculations of daily caloric intake during the field exercise "Ymer the Viking" (see text for explanation).

<b>Nations rations</b>	<b>Calories</b>	<b>Number of troops</b>	<b>Consumed rations</b>	<b>Mean daily calorie intake</b>
France	3200	28	225	3214
Germany	3524	26	166	2812
Canada	4395	25	189	4153
Slovenia	3537	25	200	3537
England	4000	25	160	3200
USA	3995	24	224	4661
Norway	3672	25	Not valid <sup>17</sup>	Not valid <sup>18</sup>
Total	26323	178	1164	21577
Mean ± S.D.	3760 ± 366		194 ± 19	3596 ± 627

In Table 9, participating soldiers' daily calorie intake is showed. Soldiers provided with rations from USA had the largest daily intake, while soldiers provided with German rations had the lowest intake during this field exercise.

### **3.2.3 Compliance (or loyalty) to the combat feeding concept**

In combat, the vast majority of a soldier's food is usually provided (i.e. troops rarely, if ever, have access to any commercial food outlets or other sources of supplementary feeding). At the start of missions, combat rations are generally the only food source, other than those foods brought into the field by soldiers themselves. Participants in this study had been requested not to take supplementary food on this exercise. However, this request was not consistently adhered to. Table 11 shows the major supplementary food or beverage items taken into the field by respondents, grouped according to the ration which they were issued, and expressed as the percentage of troops in each sub-group who took at least one item of the food or beverage.

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<sup>17</sup> The platoon provided with NOR rations did not follow instructions regarding rations discard, and accurate numbers of *leftovers* and *consumed* were not available

**Table 10:** Most common supplementary foods consumed during this field exercise.

Food source	SLV	GER	USA	CAN	GBR	FRA	NOR	Mean ± S.D.
	%							
Mineral.water	100	63	14	64	82	56	38	60 ± 20
Chocolate	100	82	25	71	82	53	50	66 ± 20
Fast food	91	12	0	43	45	41	13	35 ± 23
Food from store	73	12	13	64	45	0	50	37 ± 24
Food from home	9	12	7	14	9	18	38	15 ± 7
Other food consumed	36	12	7	14	9	6	25	16 ± 9
Mean ± S.D.	68 ± 76	32 ± 43	11 ± 7	45 ± 50	45 ± 53	29 ± 36	36 ± 38	38 ± 17

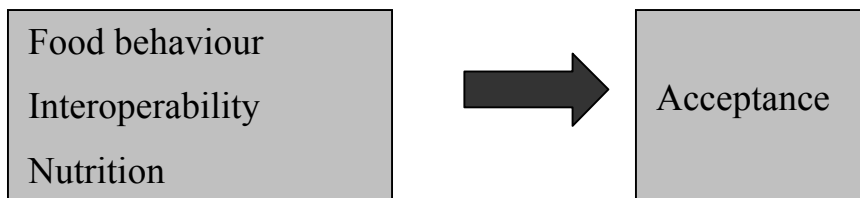
From Table 10, we can see that the platoon provided with Slovenian rations showed the least compliance, and the platoon provided with the USA rations showed the greatest compliance.

### 3.3 Sample statistics

The main goal of the thesis was to determine: *To what extent do Norwegian soldiers accept allied nations' field rations during a field exercise?* By gathering the research questions about interoperability, behaviour and nutrition, I have tried to achieve the answer for the major task.

#### 3.3.1 Acceptance

In this thesis I define the term ‘acceptance’ of combat rations to refer to adequacy in relation to the three following aspects: food behaviour (did they like the food?); interoperability (did the ration provide adequate functionality?); and nutritional aspects (did the ration meet their nutritional requirements?), as shown in Figure 2.



**Figure 4:** Acceptance as an integrated concept

As Figure 2 illustrates, acceptance will be used here as an integrated concept, combining three unrelated variables. The intention is to provide a postural interpretation.

### 3.3.2 Acceptance during field exercise

Table 11 shows that acceptance with respect to the food behavioural aspect *like or dislike* (also known as *sensorial acceptability*) decreased slightly over the study, but remained relatively high throughout the exercise. (Note that the acceptability ratings are based on a 5-point Likert's rating scale, where 1 corresponds to 'dislike very much' and 5 to 'like very much'.)

**Table 11:** Changes in acceptability over 8 days of the exercise, showing the difference between first and last day for 6 allied nations' rations. Results shown are the minimum, maximum, mean  $\pm$  S.D. acceptability ratings obtained using a 5-point Likert's scale

Nation	First & last day	N	Min	Max	Mean
SLV	First day	11	3	5	4.36 $\pm$ 0.81
"	Last day	11	2	5	3.91 $\pm$ 0.94
"	<i>Acceptability reduction (%)</i>	11			10
GER	First day	17	1	5	3.71 $\pm$ 0.99
"	Last day	17	2	5	3.29 $\pm$ 0.85
"	<i>Acceptability reduction (%)</i>	17			11
USA	First day	15	3	5	4.47 $\pm$ 0.64
"	Last day	15	2	5	4.00 $\pm$ 0.93
"	<i>Acceptability reduction (%)</i>	15			10
CAN	First day	14	1	5	3.43 $\pm$ 1.16
"	Last day	14	1	5	3.21 $\pm$ 1.25
"	<i>Acceptability reduction (%)</i>	14			6
GBR	First day	11	2	5	3.73 $\pm$ 1.01
"	Last day	11	1	5	3.18 $\pm$ 1.47
"	<i>Acceptability reduction (%)</i>	11			15
FRA	First day	16	1	5	2.88 $\pm$ 1.26
"	Last day	16	1	5	2.31 $\pm$ 1.35
"	<i>Acceptability reduction (%)</i>	16			20

From Table 11, the reduction acceptability over eight days in acceptability of Allied nations' rations to Norwegian soldiers varied from 6% (Canada) to 20% (France). The

rations of Slovenia, Germany and the USA underwent a reduction of between 10% and 11% in acceptability during the exercise.

Table 12 is based on the same data as Table 11, but with acceptability compared with rations from USA. This is due to the USA rations having the highest acceptability level, as shown in Table 12. The results shown in Table 12 are those of a statistical analysis for *effect size* (Cohen’s d and corresponding % non-overlap between the mean scores), that shows differences in results between sub-samples. Note that the higher the value of *effect size* the greater the difference between that nation’s ration and the USA ration, i.e. % of non-overlap (Cohen, 1988).

**Table 12:** Statistical analysis of reduction in acceptability from day 1 to day 8, compared with rations from USA. Mean reduction in percent (from Table 12) is ranked from largest to smallest difference Non- overlap.

Nations ration	Mean reduction, from Table 12 (%)	Cohen’s d	≈ Non-overlap (%)
FRA	20	1.440	68
GER	11	0.822	47
CAN	6	0.715	43
GBR	11	0.656	43
SVN	10	0.111	8

As shown in Table 12, the mean difference between rations from USA and the two nation’s rations France and Germany were large in strength. The mean difference between rations from USA and rations from England and Canada were medium in strength. The mean difference between rations from USA and Slovenia were small in strength.

### 3.4 Establishments of constructs for measuring acceptance by integrating results for food behaviour (sensorial acceptability), interoperability and nutrition

The major goal of the questionnaire was to determine the acceptability of Allied nations’ field rations to Norwegian soldiers engaged in a field. The Coefficient Cronbach’s Alpha is abbreviated as *CCA* in the following of the result chapter as well as in discussion chapter.

#### 3.4.1 Sensorial aspects

Table 13 shows the six indicators that make the construct *Sensorial acceptability*.



**Table 13:** The six indicators (*Q*) of the construct *SENSORIAL ACCEPTABILITY* with “% agree” and mean  $\pm$  S.D.

<b>Indicator</b>	<b>Nation</b>	<b>N</b>	<b>% Agree</b>	<b>Mean <math>\pm</math>S.D</b>
To what extent were the provided Allied nation’s rations better than the corresponding NOR rations in relation to "appearance"? Q16a	SVN	11	73	3.45 $\pm$ 1.29
	GER	17	26	1.94 $\pm$ 0.90
	USA	15	53	3.00 $\pm$ 1.13
	CAN	14	79	2.86 $\pm$ 0.54
	GBR	11	73	3.09 $\pm$ 1.14
	FRA	17	0	1.53 $\pm$ 0.87
To what extent were the provided Allied nations rations better than the corresponding NOR rations in relation to "tasted better"? Q16b	SVN	11	100	4.09 $\pm$ 0.70
	GER	17	88	3.12 $\pm$ 1.05
	USA	15	93	3.67 $\pm$ 1.11
	CAN	14	79	2.93 $\pm$ 0.21
	GBR	11	64	3.09 $\pm$ 1.30
	FRA	17	35	2.18 $\pm$ 0.88
To what extent were the provided Allied nations rations better than the corresponding NOR rations in relation to "interesting content"? Q16c	SVN	11	82	3.91 $\pm$ 1.14
	GER	17	94	3.47 $\pm$ 0.72
	USA	15	87	3.73 $\pm$ 1.03
	CAN	14	79	2.93 $\pm$ 1.21
	GBR	11	64	3.18 $\pm$ 1.17
	FRA	17	47	2.29 $\pm$ 1.05
To what extent do you believe that your nutritional need were provide in relation to "good taste"? Q20a	SVN	11	100	4.27 $\pm$ 0.65
	GER	17	100	4.12 $\pm$ 0.78
	USA	15	93	3.93 $\pm$ 0.88
	CAN	14	86	3.64 $\pm$ 0.93
	GBR	11	64	3.36 $\pm$ 1.21
	FRA	17	59	2.82 $\pm$ 1.18
To what extent did you find the sensorial acceptability of the provided Allied nation’s rations "the last day of the exercise"? Q21b	SVN	11	73	3.18 $\pm$ 0.98
	GER	17	100	3.71 $\pm$ 0.69
	USA	15	93	4.20 $\pm$ 0.94
	CAN	14	79	3.50 $\pm$ 1.02
	GBR	11	73	3.18 $\pm$ 1.17
	FRA	17	71	2.94 $\pm$ 1.20
To what extent are you “all in all” satisfied with "the whole ration" from the provided Allied nation’s rations? Q22	SVN	11	100	4.09 $\pm$ 0.83
	GER	17	100	3.82 $\pm$ 0.64
	USA	15	93	3.87 $\pm$ 0.92
	CAN	14	93	3.43 $\pm$ 0.76
	GBR	11	73	3.55 $\pm$ 1.13
	FRA	17	59	2.94 $\pm$ 1.25
<i>N, % agree and mean <math>\pm</math> S.D.</i>	<i>SVN</i>	<i>11</i>	<i>88</i>	<i>3.77 <math>\pm</math> 0.99</i>
	<i>GER</i>	<i>17</i>	<i>85</i>	<i>3.12 <math>\pm</math> 0.92</i>
	<i>USA</i>	<i>15</i>	<i>85</i>	<i>4.08 <math>\pm</math> 0.88</i>
	<i>CAN</i>	<i>14</i>	<i>83</i>	<i>3.33 <math>\pm</math> 1.05</i>
	<i>GBR</i>	<i>11</i>	<i>69</i>	<i>3.27 <math>\pm</math> 1.18</i>
	<i>FRA</i>	<i>17</i>	<i>45</i>	<i>2.36 <math>\pm</math> 1.01</i>

In Table 13, the construct *Sensorial acceptability* shows that the platoon provided with

Slovenian rations had the highest agree (88 %) in liking the rations, while the platoon provided with the French rations had the lowest (45 %).

Table 14 shows the same construct as in Table 13, but with means ranking descending. The table has added the CCA, Cohen’s d and the % non-overlap in the purpose of showing the strength in differences between the means compared with “the winner” ration.

**Table 14:** *The construct SENSORIAL ACCEPTABILITY of the allied nations rations. Mean ranking of the construct is descending. The measurement of CCA (standardised items). Cohen’s d and % non-overlap is based on comparance with the highest mean (USA).*

<b>Nation</b>	<b>N</b>	<b>Mean ± S.D</b>	<b>Agree (%)</b>	<b>CCA</b>	<b>Cohen’s d</b>	<b>≈ Non overlap (%)</b>
USA	11	4.08 ± 0.88	85	0.88		
Slovenia	15	3.77 ± 0.99	88	0.65	0.330	8
Canada	14	3.33 ± 1.05	85	0.82	0.774	33
England	11	3.27 ± 1.18	69	0.87	0.778	33
Germany	17	3.12 ± 0.92	83	0.46	1.066	43
France	15	2.36 ± 1.01	45	0.83	1.816	68
<i>Mean</i>	<i>41</i>	<i>3.30 ± 0.89</i>	<i>76±13</i>			

In addition to Table 14, Table 15 has added the CCA and the % non-overlap in the purpose of showing the strength in differences between the means. Means are descending. The mean difference regarding *Sensorial aspects* between rations from Slovenia (highest mean) and France (lowest mean) is 1.56. Five nation’s rations are above what is usually considered being the “neutral” value (3.00), while one nation is below this level. Rations from Slovenia and USA were at or higher than 70 % agree, while British rations on “third place” had 55 %. French rations had the lowest % agree (35). In accordance to the *effect size* calculator and the corresponding table, the difference in means between Slovenian and French rations is large, with a % non-overlap about 80. Difference between Slovenian and American rations has a % non-overlap 8, which is considered as a small difference. The CCA ranged between 0.46 (GER) to 0.88 (USA). All CCA’s were at acceptable (medium) or large levels, except the German ration’s CCA, which is probably too low be taken into consideration being a reliable construct (Ringdal, 2007).

### 3.4.2 Interoperability aspects

The major aspects in the term of Interoperability concerns whether the rations are practical to prepare, able to heat up the entrees (main dishes) and disposal handling. Table 15

illustrates the construct *interoperability*, made by seven interoperability-reflecting questions.

**Table 15:** *The seven indicators of the construct INTEROPERABILITY with “% agree” and mean ± S.D.*

Indicator	Nation	N	% Agree	Mean ±S.D
To what extent was the provided Allied nations rations better than the corresponding NOR rations in relation to "practical to prepare"? Q16f	SVN	11	91	4.45 ± 0.63
	GER	17	47	2.59 ± 1.23
	USA	15	100	4.60 ± 0.63
	CAN	14	29	1.86 ± 0.86
	GBR	11	46	2.45 ± 1.13
	FRA	15	27	1.87 ± 0.83
To what extent was the provided Allied nations rations better than the corresponding NOR rations in relation to "better functionality"? Q16g	SVN	11	82	3.73 ± 1.01
	GER	17	41	2.29 ± 0.69
	USA	15	100	4.27 ± 0.70
	CAN	14	57	2.29 ± 1.07
	GBR	11	64	2.73 ± 1.19
	FRA	15	13	1.62 ± 0.86
To what extent was the provided Allied nations rations better than the corresponding NOR rations in relation to "less discard/waste"? Q16h	SVN	11	27	2.00 ± 0.76
	GER	17	6	2.29 ± 0.59
	USA	15	13	1.60 ± 0.74
	CAN	14	21	1.64 ± 0.84
	GBR	11	9	1.82 ± 0.60
	FRA	15	6	1.25 ± 0.76
To what extent was the provided Allied nations rations better than the corresponding NOR rations in relation to "easier to handle discard/waste"? Q16i	SVN	11	64	2.55 ± 1.21
	GER	17	6	1.41 ± 0.62
	USA	15	13	1.67 ± 0.72
	CAN	14	29	1.71 ± 0.91
	GBR	11	46	1.92 ± 1.04
	FRA	15	6	1.25 ± 0.76
To what extent did you manage to adapt “best praxis” to the provided Allied nation’s rations? Q18	SVN	11	27	4.18 ± 0.60
	GER	17	94	3.76 ± 0.83
	USA	15	100	4.27 ± 0.70
	CAN	14	79	3.36 ± 1.15
	GBR	11	82	3.73 ± 1.01
	FRA	15	82	3.18 ± 0.95
With regards to the hot entrees/main courses (Lunch/Dinner) in the Allied nations rations; to what extent were you satisfied with the required way of prepare the rations? Q26	SVN	11	100	4.55 ± 0.69
	GER	17	47	2.47 ± 1.18
	USA	15	100	4.53 ± 0.52
	CAN	14	21	1.71 ± 0.83
	GBR	11	55	2.73 ± 1.35
	FRA	15	29	2.12 ± 1.27
With regards to the hot entrees/main courses (Lunch/Dinner/breakfast) in the Allied nations rations; to what extent did you manage to achieve sufficient temperature? Q27	SVN	11	100	4.55 ± 0.52
	GER	17	100	3.71 ± 0.92
	USA	15	100	4.60 ± 0.51
	CAN	14	79	3.29 ± 1.07
	GBR	11	82	3.64 ± 1.12
	FRA	15	82	3.71 ± 1.26
<i>N. % total agree. and total mean ± S.D.</i>	<i>SVN</i>	<i>11</i>	<i>70</i>	<i>3.70 ± 0.82</i>
	<i>GER</i>	<i>17</i>	<i>49</i>	<i>2.50 ± 0.86</i>
	<i>USA</i>	<i>15</i>	<i>75</i>	<i>3.65 ± 0.65</i>
	<i>CAN</i>	<i>14</i>	<i>45</i>	<i>2.27 ± 0.96</i>
	<i>GBR</i>	<i>11</i>	<i>55</i>	<i>2.71 ± 1.06</i>
	<i>FRA</i>	<i>15</i>	<i>35</i>	<i>2.14 ± 0.96</i>

In Table 15, the construct *Interoperability* shows that the platoon provided with Slovenian rations had the highest % agree (70) in liking the rations, while the platoon provided with the French rations had the lowest (35 %).

Table 16 shows the same construct as in Table 15, but with means ranking descending. The table has added the CCA, Cohen’s d and the % non-overlap in the purpose of showing the strength in differences between the means compared with “the winner” ration.

**Table 16:** *The construct INTEROPERABILITY of the allied nations rations. Mean ranking is descending. The measurement of CCA (standardised items), Cohen’s d and % non-overlap is based on comparance with the highest mean (SVN).*

Nation	N	Mean ± S.D	Agree (%)	CCA	Cohen’s d	≈ % non-overlap
Slovenia	11	3.70 ± 0.82	70	0.78		
USA	15	3.65 ± 0.65	75	0.80	0.068	15
Britain	11	2.71 ± 1.06	55	0.85	1.045	59
Germany	17	2.50 ± 0.86	49	0.45	1.428	71
Canada	14	2.27 ± 0.96	45	0.89	1.602	75
France	15	2.14 ± 0.96	35	0.75	1.747	79
Mean	14	2.81 ± 0.89	55 ± 12			

In addition to Table 15, Table 16 has added the CCA and the % non-overlap in the purpose of showing the strength in differences between the means. Means are descending. The mean difference regarding *Interoperability* aspects between rations from Slovenia (highest mean) and France (lowest mean) is 1.56. Two nations’ rations are above what is usually considered being the “neutral” value (3.00), while four are or below. Rations from Slovenia and USA were at or higher than 70 % agree, while British rations on “third place” had 55 %. French rations had the lowest % agree (35). In accordance to the *effect size* calculator and the corresponding table, the difference in mean between Slovenian and French rations is large, with a % non-overlap about 80. Difference between Slovenian and American rations has a % non-overlap 15, which is considered as a small difference. The CCA ranged between 0.45 (GER) to 0.89 (CAN). All CCA’s were at acceptable (medium) or large levels, except the German ration’s CCA, which is probably too low be taken into consideration being a reliable construct (Ringdal, 2007) .

### **3.4.3 Nutritional aspects**

Several questions covered the research question: *To what extent do Norwegian soldiers find nutritional aspects provided (or trusted) in the different nation's field rations?* Suitable (in the context of food intake), practical to prepare (in the context of food intake), variety, healthy components, “nutritionally meet my needs” and “nutritionally well for me” are the major aspects in this question. In Table 17, the construct *Nutrition* is illustrated. The construct is made by seven nutrition related aspects, i.e. to what extent do respondents have nutritionally beliefs in the provided rations regarding above-mentioned aspects.

**Table 17:** Seven indicators of the construct *NUTRITION*. with “% agree” and mean  $\pm$ S.D.

<b>Indicator</b>	<b>Nation</b>	<b>N</b>	<b>% Agree</b>	<b>Mean <math>\pm</math>S.D</b>
To what extent was the provided Allied nations’ rations better than the corresponding NOR rations in relation to "more suitable to my nutritional needs"? Q16e	SVN	11	82	3.18 $\pm$ 0.87
	GER	17	6	1.65 $\pm$ 1.00
	USA	15	73	2.73 $\pm$ 0.70
	CAN	14	79	3.00 $\pm$ 0.96
	GBR	11	60	2.80 $\pm$ 0.92
	FRA	15	6	1.50 $\pm$ 0.63
To what extent do you believe that your nutritional need was provide in relation to "practical to prepare"? Q20b	SVN	11	100	4.55 $\pm$ 0.52
	GER	17	75	3.50 $\pm$ 1.21
	USA	15	100	4.67 $\pm$ 0.49
	CAN	14	50	2.50 $\pm$ 1.35
	GBR	11	73	3.18 $\pm$ 1.47
	FRA	15	59	3.41 $\pm$ 1.48
To what extent do you believe that your nutritional need was provided in relation to "food variety"? Q20c	SVN	11	82	3.45 $\pm$ 1.37
	GER	17	82	3.53 $\pm$ 1.01
	USA	15	100	4.47 $\pm$ 0.74
	CAN	14	93	3.64 $\pm$ 1.08
	GBR	11	73	3.45 $\pm$ 1.13
	FRA	15	82	3.88 $\pm$ 1.22
To what extent do you believe that your nutritional need was provided in relation to "healthy food"? Q20d	SVN	11	82	3.45 $\pm$ 0.82
	GER	17	82	3.35 $\pm$ 1.00
	USA	15	60	2.87 $\pm$ 1.06
	CAN	14	100	2.93 $\pm$ 0.92
	GBR	11	82	3.27 $\pm$ 0.91
	FRA	15	69	3.38 $\pm$ 1.36
During a NRF mission, it's expected to be provided with Allied nation’s rations up to 30 days. You have now been provided with these Allied nations rations for 10 days. From a nutritional requirement's point of view, to what extent did these rations meet your needs? Q19	SVN	11	82	3.36 $\pm$ 0.92
	GER	17	65	2.82 $\pm$ 0.95
	USA	15	100	3.93 $\pm$ 0.70
	CAN	14	86	3.43 $\pm$ 0.85
	GBR	11	73	3.45 $\pm$ 1-21
	FRA	15	12	1.65 $\pm$ 0.70
To what extent do you believe that your nutritional need was provided in relation to "few additives"? Q20e	SVN	11	100	3.00 $\pm$ 0.82
	GER	17	47	2.35 $\pm$ 0.86
	USA	15	27	2.07 $\pm$ 0.88
	CAN	14	64	2.57 $\pm$ 0.85
	GBR	11	73	2.82 $\pm$ 0.60
	FRA	15	65	2.88 $\pm$ 1.05
With regards to the hot entrees/main courses (Lunch/Dinner) in the Allied nations rations; to what extent were you satisfied with nutritional qualities? Q26h	SVN	11	90	3.00 $\pm$ 0.45
	GER	17	69	2.94 $\pm$ 0.85
	USA	15	93	3.27 $\pm$ 0.70
	CAN	14	93	3.00 $\pm$ 0.39
	GBR	11	91	3.27 $\pm$ 0.79
	FRA	15	24	1.76 $\pm$ 0.97
<i>N. % agree and mean <math>\pm</math> S.D.</i>	<i>SVN</i>	<i>11</i>	<i>86</i>	<i>3.43 <math>\pm</math> 0.83</i>
	<i>GER</i>	<i>17</i>	<i>55</i>	<i>2.88 <math>\pm</math> 0.98</i>
	<i>USA</i>	<i>15</i>	<i>76</i>	<i>3.43 <math>\pm</math> 0.76</i>
	<i>CAN</i>	<i>14</i>	<i>78</i>	<i>3.01 <math>\pm</math> 0.97</i>
	<i>GBR</i>	<i>11</i>	<i>72</i>	<i>3.18 <math>\pm</math> 1.00</i>
	<i>FRA</i>	<i>15</i>	<i>45</i>	<i>2.64 <math>\pm</math> 1.07</i>

In Table 17, the construct *Nutrition* shows that the platoon provided with Slovenian rations had the highest % agree (86) in liking the rations, while the platoon provided with the French rations had the lowest (45 %). The difference regarding nutritional aspects between rations mean from Slovenia (highest) and France (lowest) is 0.89. Four nations rations are at or above mean 3.00 and two are at or below. The highest % agree score was 86% and four nation's rations were at or above 70%.

Table 18 shows the same construct as in Table 17, but with means ranking descending. The table has added the CCA, Cohen's d and the % non-overlap in the purpose of showing the strength in differences between the means compared with "the winner" ration.

**Table 18:** *The construct NUTRITION and the respondents trust regarding nutritional aspects in allied nation's rations. Mean ranking is descending.*

<b>Nation</b>	<b>N</b>	<b>Mean ± S.D.</b>	<b>Agree (%)</b>	<b>CCA</b>	<b>Cohen's d</b>	<b>≈ % Non-overlap</b>
USA	15	3.43 ± 0.76	76	0.77		
Slovenia	10	3.43 ± 0.83	86	0.54	0.000	0
England	10	3.18 ± 1.00	72	0.85	0.281	21
Canada	14	3.01 ± 0.91	78	0.74	0.501	33
Germany	15	2.88 ± 0.98	55	0.55	0.627	38
France	16	2.64 ± 1.07	45	0.79	0.851	52
<i>Mean</i>		<i>3.10 ± 0.66</i>	<i>69 ± 12</i>			

In addition to Table 17, Table 18 has added the CCA and the % non-overlap in the purpose of showing the strength in differences between the means. Means are descending. The mean difference regarding *Nutrition* aspects between rations from USA and Slovenia (highest mean) and France (lowest mean) is 0.79. Four nations' rations are above what is usually considered being the "neutral" value (3.00), while two are below. Rations from Slovenia, USA and UK were at or higher than 70 % agree. French rations had the lowest % agree (45). In accordance to the *effect size* calculator and the corresponding table, the difference in mean between American and Slovenian vs. French rations is medium, with a % non-overlap about 50. The CCA ranged between 0.54 (SVN) to 0.85 (UK). All CCA's were at acceptable (medium) or large levels, except the Slovenian and German rations' CCA, which are probably too low be taken into consideration being a reliable construct (Ringdal, 2007).

### 3.5 Establishing a “grand” construct called *Acceptability* from the collapsing of the three sub constructs *Sensorial acceptability*, *Interoperability* and *Nutritional aspects*

As a prerequisite to establish a main construct, the three sub constructs have to correlate relatively strongly, positively and significantly with each other (Pallant, 2007). In Table 20, all of the three sub-constructs variables are listed with their means, S.D. and CCA’s

**Table 19:** *ACCEPTABILITY*, all variables (20 items) in the three sub constructs *SENSORIAL ACCEPTABILITY*, *INTEROPERABILITY* and *NUTRITION* listed with” % agree”, mean  $\pm$  S.D., CCA, Cohen’s d and % non overlap (compared with highest mean; rations from USA).

Nation	N	Mean $\pm$ S.D	Agree (%)	Mean $\pm$ S.D	CCA	Cohen’s d	$\approx$ % Non-overlap
USA	15	3.72 $\pm$ 0.76	79	3.72 $\pm$ 0.76	0,92		
Slovenia	10	3.63 $\pm$ 0.88	81	3.63 $\pm$ 0.88	0,83	0.109	7
England	10	3.06 $\pm$ 1.08	65	3.06 $\pm$ 1.08	0,95	0.707	43
Canada	14	2.87 $\pm$ 0.98	68	2.87 $\pm$ 0.98	0,90	0.969	52
Germany	15	2.83 $\pm$ 0.92	62	2.83 $\pm$ 0.92	0,76	1.055	55
France	16	2.38 $\pm$ 1.01	42	2.38 $\pm$ 1.01	0,81	1.499	71
Mean	15	3.06 $\pm$ 0.52	66	3.06 $\pm$ 0.52			

In Table 19, all variables are listed, summarized and calculated with different statistical analysis. Highest mean had rations from USA followed by Slovenian rations. On a “third place”, with mean just above 3.00, were rations from Brattain. The remaining three nations rations ranged from just below mean = 3.00 (UK) and just above mean = 2.00 (FRA) the CCA is acceptable (GER) or strong (respective rations) for all nations’ rations (varying from 0.76 for GER to 0.95 for the UK). The reliability of the “grand” construct seems strong and suitable to the statistical analysis. Rations from USA and Slovenia seem to have the highest acceptability. Compared with US rations, England, Canada, Germany and France had from 52 % to 81 % non overlap, i.e. the strength in the means difference goes from medium (UK) to large (CAN, GER, FRA). Respondent frequencies of % agree show that rations from USA and Slovenia had a satisfying rating at about 80%, while rations from GBR, CAN and GER had above 60% and FRA had the lowest % agree with less than 50%.



### 3.5.1 Acceptance to allied nations field rations during field exercise?

6 nation's field rations were objects for a survey. They had differences regarding amount of calories, their distribution of macro- and micro nutrients, choice (variety), taste as well as interoperability aspects. The following chapters will give descriptive as well as others statistical analysis from the research question prospective. Table 20 illustrates the main construct, *Acceptability* that is made by the three sub-constructs *Sensorial acceptability*, *Interoperability* and *Nutrition*.

**Table 20:** The grand construct *ACCEPTABILITY* with calculated differences between Allied nation's rations means. One-way ANOVA. (+) or (-) indicate significant higher or lower means, respectively

Nation	Mean ± S.D.	N	Nations with significant difference in mean (p < 0.05) compared to the nations' means in the second left column.
USA	3.72 ± 0.76	14	Germany (+) England (+) Canada (+) France (+)
SLV	3.63 ± 0.88	9	Germany (+) Canada (+) France (+)
GBR	3.06 ± 1.08	10	France (+) USA (-)
CAN	2.87 ± 0.98	14	USA (-) France (+) Slovenia (-)
GER	2.83 ± 0.92	15	Slovenia (-)
FRA	2.38 ± 1.01	14	USA (-) France (+) USA (-) Germany (-) Canada (-) France (-) Slovenia (-)

By using one-way ANOVA, Table 20 shows that rations from USA had a significant higher acceptability ( $p=0.05$ ), than all other nations rations, except from Slovenia. Rations from France had a significant lower acceptability than all other Allied nations rations

### 3.6 Each nations rations components ranked from top to bottom

In this chapter each of the seven nations rations components are ranked descending. Tables 21 to 27, provides the ranking of the all participating nations rations, starting with the German ration components which are ranked in table 21. Some nations ration components are some places described with their national name. English translation is provided in blocks.

**Table 21:** *Ration component, ranking German rations*

<b>Lunch and dinner</b>	<b>N</b>	<b>Mean <math>\pm</math> S.D.</b>
Indian rice stew with minced poultry steaks.	16	4.25 $\pm$ 0.86
Ravioli in mushroom Sauce.	16	4.18 $\pm$ 0.91
Rice stew with minced meat rolls.	14	4.07 $\pm$ 0.92
South American Vegetable chilli.	14	4.00 $\pm$ 1.18
Goulash with potatoes.	16	3.81 $\pm$ 0.98
Hamburger with tomato sauce.	15	3.47 $\pm$ 0.92
<i>Mean of mean</i>		<i>3.96 <math>\pm</math> 0.96</i>
<b>Snack and other supplements</b>		
Kaugummi (Chewing Gum).	16	3.88 $\pm$ 1.09
Hartkaks(bisquit).	17	3.65 $\pm$ 1.06
Chip Candy.	7	3.29 $\pm$ 0.95
Mint Chocolate.	7	3.14 $\pm$ 0.90
Roggenschrotbrot (bread).	16	3.06 $\pm$ 1.57
Schokolade.	16	3.06 $\pm$ 1.06
Caramel Candy.	6	3.00 $\pm$ 1.26
Griesspesisse mit fruchten.	14	2.57 $\pm$ 1.22
Obstsalat.	16	2.56 $\pm$ 1.31
<i>Mean of mean</i>		<i>3.13 <math>\pm</math> 1.16</i>

<b>Spreads</b>	<b>N</b>	<b>Mean</b>
Konfitüre sauerkirscher (Jam).	14	3.00 ± 1.36
Honey.	7	3.00 ± 1.29
Liberwürst.	16	2.75 ± 1.44
Bierwürst.	16	2.75 ± 1.44
Rindfleischschinkenwurst.	16	2.75 ± 1.29
Konfitüre schwarze johannesbeer.	13	2.54 ± 1.05
Konfitüre apricot.	13	2.46 ± 1.20
RindfleischLyonerGrosse.	16	2.44 ± 1.15
<i>Mean of mean</i>		<i>2.71 ± 1.28</i>

<b>Beverage</b>	<b>N</b>	<b>Mean</b>
Energydrink Grape fruit.	17	3.24 ± 1.25
Energydrink Exotic.	17	3.06 ± 1.48
Teextrakt.	12	2.00 ± 1.35
Kaffeextrakt.	14	1.93 ± 1.33
<i>Mean of mean</i>		<i>2.56 ± 1.35</i>

In Table 21 (GER rations), the most popular Lunch and Dinner component was Indian stew. The least popular component was Hamburger. The difference from top (4.25) and bottom (3.47) was 0.78 and 1.53 from dislike range. The component group Lunch and Dinner had a high mean at around 4.00. The component group Snack and other Supplements had the Chewing gum (Kaugummi) and cracker as the most popular. The least popular component was the fruit salad. The component group Spreads had the two sweet products jam and honey ranked on top (3.00). All other were below 3.00. The component group Beverage, had two Energy drinks ranked as the highest, both with mean above 3.00.

The discard that were quantified during exercise, correlated well with the German ration components in Table 21. In table 22, the Slovenian ration components are ranked.

**Table 22:** Ration component, ranking Slovenian rations

<b>Breakfast</b>	<b>N</b>	<b>Mean</b>
Chocolate Muesli.	10	3.80 ± 1.55
Breakfast Muesli.	9	3.56 ± 1.42
Muesli with raisins, apples and milk.	6	2.67 ± 1.37
<i>Mean of mean</i>		<i>3.34 ± 1.45</i>
<b>Lunch and dinner</b>		
Pasta Porcini.	10	4.40 ± 1.07
Chicken Potato Stew.	10	4.20 ± 0.42
Pasta Bolognaise.	11	4.18 ± 0.87
Chicken Casserole.	11	4.18 ± 0.87
Pasta Siciliana with olives.	9	4.11 ± 1.36
Vegetable Sausage & Black pepper pasta.	10	3.30 ± 1.42
<i>Mean of mean</i>		<i>4.06 ± 1.00</i>
<b>Dessert</b>		
Mousse au Chocolate	11	4.45 ± 1.21
Wild Berry Yogurt Dessert	7	3.29 ± 1.11
Cream Cheese Strawberry	8	3.00 ± 0.93
<i>Mean of mean</i>		<i>3.58 ± 1.08</i>
<b>Snack and other supplements</b>		
Vitamin enriched bonbons (drops).	11	4.18 ± 0.98
Bread substitute.	10	3.80 ± 0.92
Chocolate.	11	3.18 ± 0.98
Chewing Gum.	3	3.00 ± 1.00
Energybar.	9	1.44 ± 1.01
<i>Mean of mean</i>		<i>3.12 ± 0.98</i>
<b>Spreads</b>		
Tuna fish in olive oil.	7	3.29 ± 1.60
Liver pate.	8	3.00 ± 1.41
Honey.	6	3.00 ± 1.41
Marmelade.	7	2.86 ± 1.21
Canned meat.	7	2.71 ± 1.11
Tuna fish pate.	7	2.71 ± 1.89
Fish pate with Vegetables and mackerel.	7	2.57 ± 1.27
Fish with Vegetables.	5	1.80 ± 1.10
<i>Mean of mean</i>		<i>2.74 ± 1.38</i>
<b>Drinks and beverage</b>		
Instant tea.	6	3.67 ± 1.37
Vitamin-mineral drink.	9	2.78 ± 1.09
Instant coffee.	3	2.67 ± 1.53
<i>Mean of mean</i>		<i>3.04 ± 1.33</i>

In Table 22 (SVN rations), the two most popular Breakfast's had means above 3.50. The third (and last) breakfast alternative had a mean at 2.67; 1.13 between the highest and the lowest. By using the effect size calculator and Cohen's d, the % non-overlap to measure the strength in the difference, showed 47, which is a large difference. The component group Lunch and Dinner had a high mean, with Pasta Porcini as the highest. The component group Lunch and Dinner had a high mean at around 4.00. The component group Snack and other Supplements had the Chewing gum (Kaugummi) and cracker as the most popular. The least popular component was the fruit salad. The component group Spreads had to the two sweet products jam and honey on top with mean at 3.00. All other were below 3.00. The component group Beverage, had two Energy drinks ranked as the highest, both with mean about higher 3.00.

The discard that were quantified during exercise, correlated well with the Slovenian ration components, showed in Table 22. In Table 23, the French rations are ranked.

**Table 23:** Ration component, ranking French rations

<b>Lunch and dinner</b>	<b>N</b>	<b>Mean</b>
Lasagne with beef.	8	4.63 ± 0.74
Oriental salad.	10	3.20 ± 1.14
Beef and carrots.	14	3.14 ± 1.46
Tuna salad.	10	3.10 ± 1.37
Tortellini with beef.	8	3.00 ± 1.31
Pasta salad with salmon.	2	3.00 ± 2.83
Macaroni with sausage.	3	3.00 ± 1.73
Lamb stew.	7	2.86 ± 1.07
Duck and potato.	12	2.75 ± 1.22
Chicken Tajine.	5	2.60 ± 1.67
Duck olives potatoes.	7	2.57 ± 1.40
Pork salad.	9	2.56 ± 1.59
Lamb Tajine.	3	2.33 ± 2.31
Potato cheese and bacon stew.	3	2.33 ± 0.58
Sausage from Toulouse.	5	2.20 ± 1.30
Petit sale aux lantiles.	6	2.17 ± 1.17
Chilli con carne.	3	2.00 ± 0.00
Basque chicken.	2	2.00 ± 0.00
Veal Marengo.	3	1.67 ± 0.58
Salmon rice and Vegetables.	3	1.67 ± 1.15
Poultry a la Parisienne.	5	1.60 ± 0.89
Beef salad.	4	1.50 ± 0.58
Sweet and sour pork.	3	1.33 ± 0.58
Pork with Creole rice and pineapple.	4	1.00 ± 0.00
Sausage in tomato sauce.	1	1.00 ± 0.00
Cassoulet (bean stew) with duck.	1	1.00 ± 0.00
Braised ham.	2	1.00 ± 0.00
<i>Mean of mean</i>		<i>2.27 ± 0.99</i>
<b>Snack and other supplements</b>		
Biscuits de champagne (biscuits).	16	3.31 ± 1.25
Dark chocolate (Chocolate noir).	16	2.81 ± 1.28
Pate fruits Aromatisee (fruit bar).	16	2.50 ± 1.41
Batonnet aux nougat tendre aux fruits (fruit nougat bar).	14	2.29 ± 1.20
<i>Mean of mean</i>		<i>2.73 ± 1.29</i>

<b>Spreads</b>	<b>N</b>	<b>Mean</b>
Tuna pate.	9	2.78 ± 1.30
Wild deer pate.	3	2.33 ± 1.15
Sardines.	11	2.09 ± 1.70
Salmon pate.	6	2.00 ± 1.10
Duck and rice pate.	4	2.00 ± 2.00
Maquerel pate.	6	2.00 ± 1.26
Mushroom pate.	3	2.00 ± 1.73
Escabeche of tuna.	3	2.00 ± 1.73
Poultry liver pate.	9	1.78 ± 1.09
Rabbit terrine.	4	1.75 ± 1.50
Traditional pate.	4	1.75 ± 0.96
Garnityre de sandwich.	3	1.33 ± 0.58
Deer terrine.	2	1.00 ± 0.00
Hare pate.	2	1.00 ± 0.00
<i>Mean of mean</i>		<i>1.84 ± 1.15</i>
<b>Drinks and beverage</b>		
Cacao.	11	3.91 ± 0.94
Energy drink lemon.	14	3.86 ± 1.10
Coffee.	11	3.73 ± 1.27
Energy drink orange.	12	3.58 ± 1.16
Tea.	8	3.50 ± 1.41
Boisson rafraichissante, arome orange.	5	3.00 ± 1.41
Boisson rafraichissante, arome citron.	5	2.80 ± 1.48
<i>Mean of mean</i>		<i>3.48 ± 1.26</i>

In Table 23 (FRA rations), the most popular main course (in the entire study) from the component group Lunch and Dinner was Lasagne with beef. The oriental salad on “second place” (among the FRA rations) had a mean 1.43 lower than the Lasagne with Beef. The difference in mean between first and second place by using the Cohen’s d and % non-overlap is 71, which is a large difference. 26 other meals had a mean from about 3.00 to 1.00. The component group Snack and other Supplements had one component above 3.00 and three below. The biscuit had the highest and the fruit nougat bar had the lowest. The component group Spreads with more than ten components, had no one at or above mean = 3.00, and had as a group a mean below 2.00. The component group Beverage, had six components at or above 3.00 and one below. Comparable beverages; Energy drink Lemon (ranked No 2) and Fruit drink, Lemon (ranked the as the lowest) had a % non-overlap at 47, which is considered to be a large different between means.

The discard that were quantified during exercise, correlated well with the French rations components in Table 23. In Table 24, the British rations are ranked.

**Table 24:** Ration component, ranking British rations

<b>Breakfast</b>	<b>N</b>	<b>Mean±S.D</b>
Muesli-Fruitful.	7	3.86 ± 0.90
Muesli-Natural.	8	3.75 ± 0.89
Pork Sausage & Beans.	9	3.67 ± 1.00
Chicken Sausage Beans.	11	3.64 ± 1.21
Oat Breakfast.	7	3.57 ± 0.98
Muesli-Toasted.	6	3.50 ± 0.84
Bacon Omelette Beans.	11	3.45 ± 1.21
Sausage Omelette & Beans.	11	3.36 ± 1.35
All Day Breakfast.	3	3.00 ± 1.00
Porridge Strawberry.	2	3.00 ± 1.41
<i>Mean of mean</i>		<i>3.48 ± 1.08</i>
<b>Lunch and dinner</b>		
Chicken Sweet & Sour Pasta.	5	4.20 ± 1.30
Chicken Sweet & Sour.	7	4.14 ± 1.07
Beef Ravioli in Mushroom.	5	4.00 ± 1.22
Beef Stroganoff.	5	4.00 ± 1.22
Chicken Chilli.	4	4.00 ± 1.41
Chilli Con Carne.	5	3.80 ± 1.10
Green Chicken Curry.	4	3.75 ± 1.26
Paella.	5	3.60 ± 1.52
Beef & Cassava.	4	3.50 ± 1.00
Chicken Tikka Masala.	4	3.50 ± 1.00
Lamb Curry.	4	3.50 ± 1.29
Chicken Tomato Pasta.	3	3.33 ± 1.53
Steak & Vegetables.	3	3.33 ± 1.15
Mexican Tuna Pasta.	10	3.30 ± 1.57
Italian Tuna Pasta.	10	3.20 ± 1.40
Tuna Rigatoni.	7	3.14 ± 1.57
Tuna Chilli Pasta.	10	3.10 ± 1.45
Bean Pasta Salad.	5	3.00 ± 1.41
Pasta Salad.	6	3.00 ± 1.26
Chicken Arrabiata.	3	3.00 ± 1.00
Thai Green Vegetable Curry.	2	3.00 ± 1.41
Yellow Chicken Curry.	5	3.00 ± 0.71
Western Tuna Pasta.	7	2.71 ± 1.38
Vegetable Korma.	2	2.50 ± 0.71
Ham Tomato Flavour Noodle.	4	2.25 ± 2.06
Salmon Pasta Salad.	2	2.00 ± 0.00
<i>Mean of mean</i>		<i>3.30 ± 1.23</i>



<b>Snack and other supplements</b>	<b>N</b>	<b>Mean±S.D</b>
Spearmint Chewing Gum.	5	4.40 ± 0.55
Biscuit Oreos.	8	4.38 ± 0.74
Fruit Cocktail In Pineapple Juice.	8	4.38 ± 0.74
Bar Biscuit & Sultana.	4	4.25 ± 0.96
Sliced Peaches with Syrup.	4	4.25 ± 0.96
Sliced Apples.	4	4.25 ± 0.96
Just Nuts.	4	4.25 ± 0.50
Fruit & Nut Mix.	9	4.22 ± 0.67
Chop Chip Cake.	5	4.20 ± 0.45
Fruit Cocktail in Light syrup.	6	4.17 ± 0.98
Tropical Fruit Mix.	7	4.14 ± 0.90
Tabasco Green.	6	4.00 ± 0.89
Tabasco Red.	6	4.00 ± 0.89
Bar Castus Apricot.	3	4.00 ± 1.00
Bar Castus Fruit Mix.	3	4.00 ± 1.00
Bar Castus Strawberry.	3	4.00 ± 1.00
Bar Golden Oat.	3	4.00 ± 1.00
Pineapple Tidbits.	3	4.00 ± 1.00
Raspberry Shortcake.	8	4.00 ± 1.77
Peppermint Chewing Gum.	7	4.00 ± 1.00
Sliced Pears.	8	4.00 ± 1.41
Soup Tomato Basil.	8	3.88 ± 0.99
Boiled Sweets.	5	3.80 ± 1.10
FruitPuree Apple/Raspberry/Blackcurrant.	4	3.75 ± 0.96
Fruit Puree Kiwi/Passion Fruit/Apple.	4	3.75 ± 0.96
Biscuit Fruity Oaty.	4	3.75 ± 0.96
Bar Fruit & Oat Snack.	7	3.71 ± 1.38
Fruit Grains Raspberry.	3	3.67 ± 0.58
Soup Chicken and Vegetable.	5	3.60 ± 1.14
Bar Cranberry.	5	3.60 ± 1.67
Sugar sticks.	4	3.50 ± 0.58
Fruit Grains-Berry Combo.	2	3.50 ± 0.71
Bar Caramel.	9	3.44 ± 1.51
Menthol Chewing Gum.	7	3.43 ± 1.81
Fruit Puree Apple/Peach.	4	3.25 ± 0.50
Biscuit Ginger Crunch.	9	3.11 ± 1.05
Fruit Puree Mango/Banana/Apple.	4	3.00 ± 2.16
Lemon Sponge Pudding.	5	3.00 ± 2.00
Rice Pudding.	8	3.00 ± 1.31
Pilau Rice.	7	3.00 ± 1.63
Plain Rice.	5	2.40 ± 1.52
<i>Mean of mean</i>		<i>3.78 ± 1.07</i>

### **Spreads**

Jam Sachet.	4	3.50 ± 1.52
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<b>Drink and beverage</b>	<b>N</b>	<b>Mean±S.D</b>
Kenco Coffee Sticks.	4	4.75 ± 0.50
Drink Powder Lemon & Lime.	7	4.29 ± 0.76
Drink Powder Raspberry.	6	4.00 ± 0.89
Drink Powder Orange.	6	3.83 ± 1.47
Hot Chocolate Regular.	5	3.80 ± 0.45
Isotonic Drink Powder Exotic.	9	3.56 ± 1.51
ED Powder Lemon.	6	3.50 ± 1.05
Teabags.	5	3.40 ± 1.52
Isotonic Drink Powder Cherry.	6	3.17 ± 1.60
ED Powder Raspberry.	3	3.00 ± 1.00
Hot Chocolate Mint.	4	2.50 ± 1.91
Beverage Creamer/Whitener.	2	2.50 ± 0.71
Water Flavour sticks.	4	2.50 ± 1.00
Hot Chocolate Orange.	3	1.67 ± 1.15
<i>Mean of mean</i>		<i>3.32 ± 1.11</i>

In Table 24 (GBR rations), from the component group Breakfast, the two most popular components were Muesli products, both with means about 3.80. There were no products ranked below 3.00. From the component group Lunch and Dinner, 22 were at or above mean = 3.00, and four below. The lowest ranked product was a fish product, Salmon pasta salad. The highest ranked fish (or seafood) product was Paella. By using Cohen's d, the difference between these two according to % non-overlap was 81, which states a large difference between these two seafood/fish components. The component group Snack and other Supplements had all (43) components mean but one above or at 3.00. Chewing gum followed by Biscuits ranked the highest and three rice components ranked the lowest. The component group Spreads had only one component, jam, with an acceptable mean. The component group Beverage, had 14 components varied from Coffee (highest) to Hot chocolate (lowest). The acceptability within this group varied and difference in mean from top to bottom was 3.08. By using the Cohen's d and % non-overlap, the difference was 81, which is considered to be a large difference.

The discard that were quantified during exercise, correlated well with British ration components in Table 24. In Table 25, the American rations are ranked.

**Table 25:** *Ration component, ranking USA rations*

<b>Lunch and dinner</b>	<b>N</b>	<b>Mean±S.D</b>
Spaghetti w/meat sauce.	10	4.50 ± 0.53
Beef ravioli in meat sauce.	14	4.50 ± 0.63
Hash browns with bacon.	6	4.50 ± 0.84
Beef enchiladas.	14	4.50 ± 0.52
Chicken fajita.	10	4.50 ± 0.53
Beef stew.	13	4.46 ± 0.52
Chicken with noodles.	11	4.45 ± 0.69
Meatballs w/marinara.	10	4.40 ± 0.70
Cheese tortellini.	11	4.36 ± 0.81
Pot roast w/Vegetables.	6	4.33 ± 0.82
Chicken breast strips with salsa.	9	4.33 ± 0.71
Penne with vegetarian sausage in spicy tomato sauce.	12	4.33 ± 0.65
Mexican corn.	7	4.29 ± 0.95
Mexican macaroni & cheese.	14	4.29 ± 0.91
Meatloaf w/gravy.	12	4.25 ± 0.97
Sloppy Joe filling.	12	4.25 ± 0.97
Tortillas.	12	4.25 ± 0.75
Chicken breast filet.	13	4.23 ± 0.93
Veggie burger in BBQ sauce.	13	4.23 ± 1.24
Chilli & Macaroni.	14	4.21 ± 0.70
Grilled beef Patty.	11	4.18 ± 0.75
Chilli with beans.	14	4.14 ± 0.86
Boneless pork rib.	12	4.08 ± 1.00
Chicken w/dumplings.	11	4.00 ± 1.00
Chicken w/cavatelli.	4	4.00 ± 0.82
Mexican rice.	10	3.80 ± 0.79
Refried beans.	8	3.50 ± 1.20
Fried rice.	8	3.50 ± 0.93
Cornbread stuffing.	9	3.33 ± 0.87
Tuna in pouch.	7	3.14 ± 1.46
Vegetable manicotti.	8	3.13 ± 1.36
Cheese & Vegetable omelette.	13	2.69 ± 1.44
New England clam chowder.	7	1.14 ± 0.38
<i>Means of mean</i>		<i>3.99 ± 0.85</i>

<b>Snack and other supplements</b>	<b>N</b>	<b>Mean±S.D</b>
Cookie.	15	4.87 ± 0.35
Skittles.	15	4.87 ± 0.35
M&Ms.	15	4.80 ± 0.41
Fudge brownie.	15	4.80 ± 0.41
Pound cake.	14	4.79 ± 0.43
Filled pretzels.	10	4.70 ± 0.48
BBQ sauce.	10	4.70 ± 0.48
Cheddar combos.	9	4.67 ± 0.71
Chocolate banana muffin top.	9	4.67 ± 0.50
Tabasco, red.	11	4.64 ± 0.67
Potato sticks.	8	4.63 ± 0.52
Jalapeno ketchup.	5	4.60 ± 0.55

Chocolate pudding.	7	4.57 ± 0.53
Shortbread cookie.	11	4.45 ± 0.69
Tabasco, green.	9	4.44 ± 1.01
Walnettos.	5	4.40 ± 0.89
Steak sauce.	9	4.33 ± 0.71
Nacho combos.	9	4.33 ± 1.00
Pretzels.	13	4.31 ± 0.95
Peanut M&Ms.	14	4.29 ± 0.99
Cinnamon scone.	11	4.27 ± 1.19
Tootsie Roll.	13	4.23 ± 1.10
Hot sauce.	9	4.22 ± 0.67
Baked snack cracker.	9	4.22 ± 0.67
Cheezits.	5	4.20 ± 0.84
Reese's pieces.	5	4.20 ± 0.84
Biscuit.	13	4.15 ± 0.80
Fruit (dried).	7	4.14 ± 0.90
Cracker.	14	4.07 ± 0.83
Picante sauce.	6	4.00 ± 1.10
Chipotle snack bread.	7	4.00 ± 0.58
Beef snacks.	10	4.00 ± 1.49
HooAH Bar.	5	4.00 ± 0.71
Chocolate covered sports bar.	5	4.00 ± 0.71
Wheat snack bread.	15	3.93 ± 1.16
Ground red pepper.	7	3.86 ± 1.21
Raisin nut mix w/chocolate candies.	9	3.78 ± 1.30
Nut mix.	13	3.62 ± 1.04
Ranger bar.	9	3.56 ± 1.33
Fig bar.	8	3.38 ± 1.30
Fruit (wet pack).	6	3.33 ± 1.63
Nut raisin mix.	11	3.27 ± 1.19
Jam.	8	3.25 ± 1.04
Seasoning blend.	5	3.20 ± 1.30
Cherry-blueberry cobbler.	5	3.20 ± 0.84
First strike bar.	11	2.91 ± 1.58
Apple sauce.	9	2.89 ± 1.54
Caramel apple bar	9	2.89 ± 1.27
Cinnamon candies.	7	2.86 ± 1.07
Spiced apples.	6	2.50 ± 1.52
Granola with blueberries.	9	2.44 ± 0.88
Butter granules.	5	2.40 ± 1.67
<i>Means of mean</i>		<i>3.98 ± 0.92</i>
<b>Spreads</b>		
Bacon cheese spread.	13	4.15 ± 0.99
Jalapeno cheese spread.	15	4.07 ± 1.39
Cheese spread.	15	3.67 ± 1.23
Chunky peanut butter.	12	3.58 ± 1.38
Peanut butter.	15	3.53 ± 1.51
Chocolate peanut butter spread.	12	3.50 ± 1.62
Apple butter.	10	3.20 ± 1.32
Jelly.	7	2.86 ± 1.07
Fat free mayonnaise.	4	2.75 ± 0.96
<i>Means of mean</i>		<i>3.48 ± 1.27</i>

<b>Drinks and beverage</b>	<b>N</b>	<b>Mean</b>
Apple cider	8	4.25 ± 1.04
Lemon tea	10	4.20 ± 1.03
Dairy shake	15	4.13 ± 1.25
Coffee	11	4.09 ± 0.70
Beverage base	13	3.92 ± 1.26
CHO electrolyte beverage	12	3.92 ± 1.24
Cocoa	11	3.82 ± 0.75
Sugar free beverage base with vitamin C	12	3.67 ± 1.37
Cocoa beverage	10	3.60 ± 1.17
French vanilla coffee	7	3.43 ± 1.27
Mocca coffee	6	3.33 ± 0.52
Irish cream coffee	8	3.00 ± 1.60
<i>Means of mean</i>		<i>3.78 ± 1.10</i>

In Table 25 (USA rations), the component group Lunch and Dinner had 32 components. Two of them had mean below 3.00. The mean were about 4.00. The lowest ranked product was a seafood product, New England clam chowder. The highest ranked was Spaghetti with meat sauce (and three other components with higher S.D.). By using Cohen's d, the difference between these two according to % non-overlap was 81, which states a large different between these the most and the least popular main course. The same strength in difference is the same for the 20 highest ranked components compared with the clam chowder. The component group Snack and other Supplements had 52 components. The mean varied from 4.87 (Cookie) to 2.40 (Butter Granules). Seven components were below mean = 3.00 and 11 below mean = 4.00, i.e. 34 components ranked at or higher than mean = 4.00. The component group Spreads had nine components and two below mean = 3.00, jelly and mayonnaise. The component group Beverage, had 12 components varied from Apple cider (highest) to Irish cream coffee (lowest). No beverages were ranked with means lower than =3.00.

The discard that were quantified during exercise, correlated well with the American ration components in Table 25. In Table 26, the Canadian rations are ranked.

**Table 26:** *Ration component, ranking Canadian rations*

<b>Breakfast</b>	<b>N</b>	<b>Mean±S.D</b>
Sliced Peach with Syrup	12	3.58 ± 0.67
Scalloped Potatoes and Ham	11	3.55 ± 0.93
Sliced Apple with Syrup	12	3.50 ± 1.09
Fruit Cocktail with Syrup	12	3.50 ± 1.09
Omelette with Salsa	12	3.42 ± 1.24
Sliced Pears with Syrup	12	3.42 ± 1.08
Baked beans	11	3.36 ± 1.21
Sausage and Hash browns	12	3.33 ± 1.15
Breakfast Sausage Links	12	3.33 ± 1.07
Beans and Wieners in Tomato sauce	12	3.33 ± 0.65
Cherries with Syrup	11	3.00 ± 1.18
Banana Flavoured Oatmeal	11	2.91 ± 0.83
Maple & Brown Sugar Oatmeal	11	2.91 ± 0.83
Wild Berry Crunchy Cereals	10	2.80 ± 0.79
Baked Apple Flavoured Oatmeal	12	2.75 ± 1.06
Strawberry Apple Sauce	11	2.73 ± 0.79
<i>Mean of mean</i>		<i>3.21 ± 0.98</i>
<b>Lunch and dinner</b>		
Chicken Fajitas & Corn Mexican Style.	14	3.93 ± 0.83
Beef Ravioli with Tomato Sauce.	12	3.83 ± 1.03
Beef Macaroni with Meat Sauce.	13	3.77 ± 1.17
Beef and Vegetable Stew.	12	3.67 ± 0.89
Beef Pot Roast with Mushroom Sauce.	12	3.67 ± 1.07
Indian Chicken Breast.	11	3.64 ± 0.81
Sliced Peaches with Syrup.	12	3.50 ± 0.90
Chicken Tournedos with Pepper Sauce.	10	3.50 ± 1.27
Sliced Apples with Syrup.	12	3.50 ± 1.00
Pork with Herbs and Wine Cream Sauce.	7	3.43 ± 0.79
Fruit Cocktail with Syrup.	12	3.42 ± 1.16
Pineapple Tidbits with Syrup.	12	3.42 ± 1.08
Fruit Cocktail with Syrup.	12	3.42 ± 1.00
Chocolate Chip Square.	10	3.40 ± 1.17
Tarragon Chicken.	11	3.36 ± 1.21
Sliced Pears with Syrup.	11	3.36 ± 1.03
Mango Peach Apple Sauce.	11	3.27 ± 1.01
Cherry Blueberry Dessert.	9	3.22 ± 1.09
Blueberries with Syrup.	9	3.22 ± 1.09
Salmon Filet Nature.	10	2.90 ± 0.88
Apple Sauce.	11	2.64 ± 0.92
Macaroni with Cheese sauce.	12	2.50 ± 1.24
Cheese Tortellini with Alfredo Sauce.	11	2.45 ± 0.93
<i>Mean of mean</i>		<i>3.35 ± 1.03</i>

<b>Snack and other supplements</b>	<b>N</b>	<b>Mean</b>
Creamy Caramel Chocolate Bar.	14	4.07 ± 1.00
Tortilla.	12	4.00 ± 0.74
Mashed Potatoes.	9	3.78 ± 0.83
Jalapeno Sauce.	10	3.70 ± 0.95
Ketchup.	10	3.70 ± 0.82
Dairy Milk Chocolate Bar.	12	3.67 ± 0.89
Kit Cat Chocolate Bar.	11	3.64 ± 0.92
Instant Plain Mashed Potatoes.	8	3.63 ± 0.74
Caramel Candy.	10	3.60 ± 0.84
Chocolate Chip Cookies.	13	3.54 ± 1.05
Butter Shortbread Cookies.	10	3.50 ± 0.97
Chewing Gum.	13	3.46 ± 1.20
Pepper Sauce.	9	3.44 ± 0.73
Teriyaki Sauce.	8	3.38 ± 0.74
Steak Sauce.	9	3.33 ± 0.71
Coffee Crisps Chocolate Bar.	9	3.33 ± 0.71
Oatmeal Raisins Cookies.	10	3.30 ± 1.06
Fig Newton Cookies.	10	3.30 ± 1.06
Beef and Vegetable Noodle.	7	3.29 ± 0.49
Soya Sauce.	7	3.29 ± 0.76
Instant Sour Cream and Chives.	7	3.29 ± 0.49
Malted Chocolate Bar.	11	3.27 ± 0.90
Mango Chutney.	6	3.17 ± 0.41
Instant Buttered Rice.	6	3.17 ± 0.41
Bread.	12	3.17 ± 1.34
Aero Chunky Chocolate Bar	8	3.13 ± 0.64
Fruit Exploration	9	3.11 ± 0.78
Molasses Bear Paws	11	3.00 ± 1.00
Cream of Mushroom	6	3.00 ± 0.00
Spring Vegetable	6	3.00 ± 0.00
Mint Chocolate Chip Candy	11	2.91 ± 0.94
Cheese Sandwich Crackers	11	2.91 ± 1.22
Muffin Bar	13	2.85 ± 1.14
Instant Vegetable Couscous	6	2.83 ± 0.98
Carrot & Orange Zest Muffin Bar	11	2.82 ± 1.25
<i>Mean of mean</i>		<i>3.24 ± 0.80</i>

<b>Spreads</b>		
Peanut Butter	12	3.75 ± 0.75
Strawberry Jam	12	3.33 ± 1.15
Raspberry Jam	13	3.23 ± 0.83
Orange Marmalade	10	3.10 ± 0.88
Cranberry Jelly	8	3.00 ± 0.53
Apple Jelly	10	2.80 ± 0.92
Honey	8	2.50 ± 0.93
<i>Mean of mean</i>		<i>3.10 ± 0.86</i>

<b>Drinks and beverage</b>	<b>N</b>	<b>Mean±S.D</b>
Lime Sports Drink Crystals.	10	3.80 ± 1.14
Raspberry Sports Drink Crystals.	9	3.67 ± 1.12
Orange Sports Drink Crystals.	11	3.64 ± 1.21
Peach Sports Drink Crystals.	10	3.60 ± 1.17
Ice Sports Drink Crystals.	9	3.56 ± 1.01
Grape Sports Drink Crystals.	8	3.50 ± 1.07
Cappuccino Coffee.	8	3.38 ± 0.92
Hot Apple Beverage Crystals.	7	3.29 ± 0.95
Coffee.	8	3.25 ± 0.89
Hot Chocolate Mix.	12	3.25 ± 1.06
Mint Herbal Tea.	6	3.17 ± 0.98
Orange Pekoe Tea.	6	3.00 ± 1.10
Hazelnut Hot Chocolate Mix.	9	2.89 ± 1.36
<i>Mean of mean</i>		<i>3.38 ± 1.08</i>

In Table 26, the Canadian ration components are ranked. The most popular Lunch and Dinner component was Chicken Fajitas & Corn Mexican. The least popular component was Cheese Tortellini with Alfredo sauce. The difference from top (3.93) and bottom (2.45) was 1.48. Regarding Snack and other supplements, the most popular component was Creamy Caramel Chocolate Bar (4.07). The least popular component was Carrot & Orange Zest Muffin Bar (2.82). The difference in mean between these two products was 1.25. The most popular among the seven different Spreads was Peanut butter (3.75). The least popular was Honey (2.50). Among the selection of 13 Beverages, the mean ranged from below 4.00 to below mean = 3.00 (one component). The difference between the most and the least popular components was below mean = 1.00.

In Table 27, the Norwegian ration components are ranked.



**Table 27:** Ration component, ranking Norwegian rations

<b>Breakfast</b>	<b>N</b>	<b>Mean</b>
Breakfast-mix with flakes of honey	8	2.25 ± 1.28
Gluten free porridge	5	2.00 ± 1.22
Sunshine cereal with raspberries	8	1.75 ± 1.04
Breakfast-Mix with berries	7	1.71 ± 0.76
<b>Solgryn med cantaloupe</b>	6	1.67 ± 1.21
Breakfast-Mix with fruits	7	1.57 ± 0.79
Cereals with dates and raisins	7	1.57 ± 1.13
<i>Mean of mean</i>		<i>1.79 ± 1.06</i>
<b>Lunch and dinner</b>		
Pasta Bolognaise	8	3.88 ± 0.83
Chicken in Herbal sauce.	8	3.88 ± 0.64
Beef stew	7	3.86 ± 0.69
Beef and potato casserole	7	3.86 ± 0.38
Chicken curry	8	3.63 ± 0.74
Pasta in tomato sauce	7	3.29 ± 1.38
Pasta Provence.	8	3.25 ± 1.58
Chilli Con Carne.	8	3.00 ± 1.07
Lamb Mulligatawny	8	3.00 ± 1.07
Chicken sweet & Sour	8	2.88 ± 1.36
Rice in basil sauce.	4	2.00 ± 1.41
Wolf-fish casserole with arctic prawns and dill,	8	1.88 ± 1.13
Cod and potato casserole	8	1.75 ± 0.89
Royal Thai (fish)	8	1.13 ± 0.35
<i>Mean of mean</i>		<i>2.95 ± 0.97</i>
<b>Snack and other supplements</b>		
Energy bar	8	3.38 ± 0.92
Chewing Gum	7	3.29 ± 1.38
Biscuits	8	2.88 ± 1.25
Honey camphor (candy)	8	2.63 ± 1.60
Raisins	8	2.63 ± 1.60
Chocolate	8	2.50 ± 1.07
<i>Mean of mean</i>		<i>2.88 ± 1.30</i>
<b>Spreads</b>		
Tuna with lime & pepper	7	3.14 ± 1.77
Jam	7	2.57 ± 0.98
Mackerel in tomato sauce	7	2.57 ± 1.40
<i>Mean of mean</i>		<i>2.76 ± 1.38</i>
<b>Drinks and beverage</b>		
Hot chocolate	7	4.00 ± 0.82
Blackcurrant drink	7	3.14 ± 1.21
Energy drink Peach	6	2.83 ± 1.17
Energy drink Orange	6	2.50 ± 1.52
Energy drink Lemon	7	2.43 ± 1.40
Coffee	7	2.29 ± 1.11
<i>Mean of mean</i>		<i>2.87 ± 1.19</i>

In Table 27, the most popular Lunch and Dinner component among the variety of 14, was Pasta Bolognese. The least popular component was Royal Thai. The difference from top (3.88) and bottom (1.13) was 2.75. Regarding Snack and other supplements, the mean varied from below mean = 3.00 (Chocolate) to mean above mean = 3.00 (Energy bar). The most popular Beverage had mean about 4.00. The least popular was the Coffee (2.29)<sup>18</sup>. The difference from top (3.24) and bottom (1.93) was 1.31.

### 3.6.1 Group of components that NOR soldiers fancy the most

Tables 21 to 27 show a variety in food preferences. In Table 28, the rations components are put into components groups, in the purpose of giving ranking them.

**Table 28:** The most and the least popular rations components groups. Means  $\pm$  S.D. Likert's 5-point scale is used. The most popular are marked with **bold font** and the least popular are marked in (paragraphs).

Nation	Main courses	Spreads	Snacks	Beverage
GER	3.96 $\pm$ 0.96	2.71 $\pm$ 1.28	3.13 $\pm$ 1.16	(2.56 $\pm$ 1.35)
SVN	<b>4.06 <math>\pm</math> 1.00</b>	2.74 $\pm$ 1.38	3.12 $\pm$ 0.98	(3.04 $\pm$ 1.33)
FRA	(2.27 $\pm$ 0.99)	(1.84 $\pm$ 1.15)	(2.73 $\pm$ 1.29)	3.48 $\pm$ 1.26
GBR	3.30 $\pm$ 1.23	3.50 <sup>19</sup> $\pm$ 1.52	3.78 $\pm$ 1.07	3.32 $\pm$ 1.11
USA	3.99 $\pm$ 0.85	<b>3.48 <math>\pm</math> 1.27</b>	<b>3.98 <math>\pm</math> 0.92</b>	<b>3.78 <math>\pm</math> 1.10</b>
CAN	3.35 $\pm$ 1.03	3.10 $\pm$ 0.86	3.24 $\pm$ 0.80	3.38 $\pm$ 1.08
NOR	2.95 $\pm$ 0.97	2.76 $\pm$ 1.38	2.88 $\pm$ 1.30	2.87 $\pm$ 1.19

Table 28 illustrates (in bold font) that spreads, snacks and beverage (accompanied by GBR) are most popular from the American rations. However, the main courses from Slovenia are most popular while the main courses from France are the least popular. Spreads, Snacks and Beverage were all most popular among the American ration (i.e. UK shared the most popular Beverage). Snacks from Norwegian rations was the least popular, the French rations had the least popular main courses and Germany, Slovenia and France had the least popular Beverage (2.5).

<sup>18</sup> Coffee is not a calorie giving component, but is referred to as an important component I a field ration (NATO, 2010)

<sup>19</sup> GBR is registered with only one Spreading, thus not defined as a component group

### 3.6.2 Discard quality accounting

The primary reason for controlling the respondents' discard was behavioural validation of the results from the questionnaire. Secondly, the purpose was to visualize (quite literally, see with own eyes) what was discarded in hopes that it might shed new light on the information gathered in the study. The discard was collected three times during the exercise, and discarded items were logged when collected. Common to all nations' rations were relatively large amounts of discarded tea, coffee, sugar and whitener. The component group discarded the least was Lunch/Dinner, and the component group discarded the most was Beverage. A large number of Soups were also discarded.

Controlling the discard in this manner brings to light both discrepancies between ratings in the questionnaire and actual behaviour, as well as confirmations that they acted in accordance with stated preferences. A main course from Canada with relatively poor mean was registered discarded less than three times (units); the soldiers did not approve of it, but they consumed it never the less. Sugar is another interesting example; almost 200 units of sugar were discarded. Note that the distribution frequency of these components varied greatly. Soldiers provided with German rations, threw away more than 300 bags of sugar. Those provided with French rations discarded only 16 bags of sugar. Snacks items were popular among most nations' rations, and all varieties of cakes were discarded less frequently than typical sweets. The American *Wheat Snack Bread* and the French *Nougat aux fruit* were among products with a high discard rate.



## **4 DISCUSSION**

This chapter will be divided in the two sub-chapters. The first part, the *methodical discussion*, will discuss the choice of design, development of the questionnaire, the analysis methods and their possible weakness and strengths connected. Further find out the main concerns that should be taken in to account in assessing the results validity and reliability. The second part, the *result discussion*, the master thesis main goal and the corresponding research questions will be discussed. Results from other similar studies, will be compared with findings from this study.

### **4.1 Methodical Discussion**

In the following methodical discussion chapter, I will discuss the major critical issues of this master thesis. This mainly in three parts; first part about the study design; qualitative or quantitative, the second about development of the questionnaire and the third part is concerning the studies measurement of *acceptability*, by making constructs. In addition it will be discussed other aspects from the *Methodical chapter*.

#### **4.1.1 Quantitative study**

From master thesis project idea an up to end of the exercise “Ymer the Viking”, the sample decreased dramatically, and the apostasy has become greater than imagined. When the sample became smaller than first planned for, the limit for good statistical analysis was no longer there. An explorative design with many aspects like in this study should perhaps be done qualitative. However, my intention of the study was to provide a methodical “recipe” to NATO, in the purpose of showing allied nations a method for testing and evaluating their field rations. To make this study possible in a wider context, the investigators hope that this method and research model could be used for adaption. However, the fundament and sample size is not good enough for sample statistic analysis (Pallant, 2007; Ringdal, 2007). The relevancy of the study is as mentioned initially good, and other researchers

might want to continue the work within this area. Thus this thesis could be used as a quantitative model (or recipe) for later research.

#### **4.1.2 Questionnaire development**

Field rations trials are conducted among soldiers in Allied nations (Booth, et al., 2001; Ipsos, 2008; Johnsen & Kramer, 2007; Opinion, 2008), but there is not likely that trials with provided Allied nation's rations have been conducted within NATO before. The idea of this master thesis was therefore to make a model for Allied nation's rations trial for the future.

##### *Hedonic scale – Likert's Scale*

This study intended to measure both psychometrical aspects to provided rations as well (and including) as sensorial aspects; soldiers' like and dislike regarding the rations components. To provide a psychometrical measurement, the most common tool is 5-point Likert's scale, due to that bipolar (with values on both positive and negative scale) scales works best with 5- or 7-point scale (Haraldsen, 1999; Ringdal, 2007). Regarding ration components and measuring of sensorial acceptability, this study could might have been provided with the 9-point Hedonic scale (Hui, 2006). This due to that most Allied nation is using this for acceptability surveys. However, the 9-point hedonic scale was tested as a test to a small group of colleges and students before launching the questionnaire. All of the test-respondents had "trouble" with the 9-point scale, and commented/recommended that 5-point scale would be easier to respond to. First of all due to what they were used to as a questionnaire formula, second because 9-point scale took so much space in the formula and thus decreased the quality of the lay out (their feed-back). Although our Allied nations are using another scale than used in this thesis; it should be possible to compare findings from other trials.

All Allied nations rations had Lunch/Dinner menus. Not all had a breakfast choice as a main entrée/course. Thus, the questionnaire came out with a different number of questions depending on the main meal offer. Even though most (if not all) nations provided breakfast in one way or another, the opportunities or combination of choices were not clear to the investigator before trial start up. Due to this, it was not made a ranked list comparing only

breakfast<sup>20</sup>. This may have or could may have influenced the main course results (with regard to ranking products), but it was decided to only make comparisons between ration components (i.e. breakfast vs. breakfast and lunch vs. lunch).

It was made 146 questions. 25 of them were addressed to all 178 participants, while the rest (121) was divided in seven nation's rations participants (Here: Platoons). Between 17 and 19 specific questions were provided to each soldier in the participating seven platoons. The number of nation specific questions is different due to different ration concept between the Allied nations' rations; exemplified with Slovenia (19 questions), with both announced Desserts and breakfast, while USA (17 questions) don't specify these components in their rations. In one way, the 121 questions are unique, because they are linked to the specific nation's rations components (sensorial aspects or nutritional aspects) or interoperability aspects. On the other side, the 17 to 19 nation specific questions are built up the same way, exemplified by the following question addressed to the platoon provided with Canadian rations:

<p>116) <i>To what extent did you manage to sufficiently warm/heat up the main dishes /entrees from Canada?</i></p> <p><input type="checkbox"/> <i>Very little</i></p> <p><input type="checkbox"/> <i>Little</i></p> <p><input type="checkbox"/> <i>Neither nor</i></p> <p><input type="checkbox"/> <i>Much</i></p> <p><input type="checkbox"/> <i>Very much</i></p>
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<sup>20</sup> Ranked breakfast and dessert list is made for nations that provides those components

The only difference, i.e. - or added to those nations who provide specific breakfast or dessert, is questions regarding breakfast or dessert, exemplified by question No 39 (SVN):

<i>To what extent did you like (sensorial) the breakfast alternatives from Slovenia?</i>			
	<i>Müßli w/raising, apples, milk</i>	<i>Chocolate Müßli</i>	<i>Breakfast Müßli</i>
<input type="checkbox"/>	<i>Very little</i>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<i>Little</i>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<i>Neither nor</i>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<i>Much</i>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<i>Very much</i>	<input type="checkbox"/>	<input type="checkbox"/>

In all questions, the Likert's scale "lowest" extent is *very little*. During and after last World War, food acceptance tests were conducted in several nations; England, USA, Norway and probably others. 3-point scale was at that time the standard with following statements used in questionnaires:

*Acceptable (eatable)*

*Fair*

*Excellent* (Kreyberg, 1948).

It might be interesting to see the development in the attitude towards food. Then as now, the hunger for the highest acceptability level is important. However, it seems that the wording has a major difference, which might reflect a more demanding (soldier) society regarding food. As a reminder for the old days, this famous expression seems easy to forget: "*Lar't de vaincre est perdu sans l'art de subsister*" or in English; "*The art of winning is lost the without the art to survive*" (Napoleon). The scale from the forties starts with acceptable as the lowest ranking. To day, we measure the extent of acceptability, with a scale from 1 to 5, were anything lower than 2 might not be considered eatable among our soldiers. There are information (but not documented) that soldiers from a Special Forces unit, (almost or) always will eat the provided food. No matter if it's sensorial in the bottom of the soldiers' personal ranking list. It will be eaten because it's important to the soldier's performance (NATO, 2010). To an average soldier, this is not an option; they are probably



not trained with that focus, and as mentioned before, the discard rate is high among regular forces.

#### **4.1.3 Recruitment of sample**

This study ended up with 93 respondents. This was not a sufficient number of respondents to carry out a proper factor analysis (Pallant, 2007).

TMBN staff provided the distribution or “randomized” the sample. To make a trial possible during an exercise, similar to a NRF mission, the investigator had to accept that a process providing a regular randomized sample according scientific requirements (Aalen, et al., 2008), became unrealistic. However, the sample that existed of seven platoons belonging to the TMBN was randomly drawn from each platoon, i.e. the platoons had up to 44 soldiers. Up to 3/4<sup>th</sup> of a platoon divided on corresponding vehicles (up to full vehicle) was randomly drawn to participate in the trial. The alternative could have been to draw a randomized a sample out of 44 soldiers, and end up with 3/4<sup>th</sup> filled up vehicles with participating soldiers and 1/4<sup>th</sup> with not-participating soldiers. This option was seen as risky with regards to the effects that a small vehicle with soldiers having different ration concepts. Non regular rations swopping could thus interfere with the study.

The first week after the exercise the TMBN was addressed a link to the electronically questionnaire, *QuestBack*. The response was low and after three weeks, less than 50 respondents were registered. Prize as a voucher (or similar) is normal procedure to achieve as high respondents rate as possible (Haraldsen, 1999). An award or incitement, 2\*NOK 1500 (2\*\$275), was awarded in the purpose of achieve a large as possible respondents rate. Awards like this might influence or motivate some soldiers that normally wouldn't put that much effort in to a questionnaire.

#### **4.1.4 Data collection, data transmission and respondents rate**

This study used electronically questionnaires to collect data. The investigators reason for this choice was to secure data in the data transmission phase, which might be the best argument for using electronically questionnaires in study. In the other hand, paper questionnaire has several advantages; higher respondents rate, the possibility to “go back”

to the questionnaire, if situations gives limited time and the fact that an electronically questionnaire in theory can be forwarded to non-relevant respondents. The risk of this is not presence using paper questionnaire when under surveillance (occasionally normal procedure).

When data transmission is done by use of *QuestBack*, there should be no measurement errors. However, what you programme in to *QuestBack*, will be the source of what you get transferred in to SPSS. In this study, a major job had to be done in re-coding more than 500 variables. This might have been caused by personal mistakes by not using the optimal tools or codes in *QuestBack*. If paper questionnaires were used, the risk of measurement errors (both random typing errors and systematic interpretation and reading errors) can be found when numerical data is read and transferred manually from paper to computer file in SPSS. To ensure correct data transmission, accuracy is strongly pursued, and a post controlee is required (Ringdal, 2007).

The respondent's rate in this study was too low to be justified to make any generalizations. The master thesis use of sample statistics was therefore carried out primarily to show *strength* of any differences and correlations between key variables. As a supplement to this strength measurement was also Cohen's d and corresponds to the % *non-overlap* between two average scores calculated and shown for some key findings. Reminders have been shown to have good effect on response rate (Haraldsen, 1999), and was done multiple times directly to staff members in TMBN, who had the organisational responsibility of electronically questionnaire at a Computer lab in TMBN.

The questionnaire to this study was newly developed and not validated with both a test and a re-test. This may in itself be an explanation for the low response. Using a postal questionnaire, it's normal to get a response rate above 60% (Haraldsen, 1999). By using electronically questionnaire, it seems to be normal to have respondents rates below that level and a response rate above 30% might be seen as acceptable. Maybe thus, a response rate at 52% by using electronically questionnaire in this study ought to be acceptable.

Data from 93 respondents and sub-groups even smaller; from 8 to 17, enables statistical analysis and comparative assessments on a very small population, specialized

troops in armoured vehicles. There are not too many of them. If a total of 44 in one platoon gained up to 17 respondents of the population of that kind of personal belonging to that particular specific type of vehicle. However, the only thing that can support that statement is the fact that in this environment, there is not only the *Sensorial acceptability* that matters, but also the *Interoperability* aspects. This speaks for that the functional aspects might be added more value to this little population. Thus this master's study can probably be argued that the low response rate does not exclude that the data have some representation, even if you do not can generalize the results to the population for the different platoon's opinion.

The only knowledge sent to the Investigator is that lack of proper facilities mend for electronically questionnaire caused a reduced amount of respondents. Only on Computer lab was available to the platoons the weeks after the trial and they were not able to get the quest to their personal computers. Thus, some might find this arrangement with too much effort. In addition other and higher priorities within the battalion had to be made. Several participants were about to be transferred to Afghanistan within a short period of time and did probably not have the motivation to follow the arrangements followed according to the available Computer lab. However, some platoon leaders did manage to arrange common fixed schedules for the platoons. This might no be the optimal and voluntarily way of getting the questionnaire done, but it was arranged voluntarily. There were no signals such as “we don't want to fill in those questionnaires”, but the arrangement did not work by the intention and the respondents rate might had been larger with a traditional questionnaire (vs. electronically) or at least with facilitated electronically questionnaire send by e-mail to their personal mailbox.

#### **4.1.5 Statistical analysis of data**

Combination of limited sample and quantitative design made the analysis work difficult. Preparing factor analysis, the SPSS confirmed that 93 respondents (divided on seven sub-groups) were not ideal to get valid statistical results. Analysis mend for this use should as a minimum have 150 respondents (Ringdal, 2007), and even though there might have been solid indicators for making factor analysis, the sample was to limited. However, as a pilot

study and an intended recipe to later studies among Allied nations, it is made suggestions for both alternatives; factor analysis and effect size by Cohen's *d* with % non-overlap.

Descriptive data became a vital aspect of this study. A lot of data has not been shared in this thesis, due to the exploratory design and the focus on acceptance in three ways; sensorial, interoperability and nutrition. With a larger sample, it might be recommendable to look more into the samples aspects; urban/rural and physical activity level towards food behaviour. Recent studies in Norway (not approved for release), might show that typical athletes' don't have another eating pattern regarding healthy food than other people with normal physical activity.

The descriptive data showed means compared to each other for all constructs as well as other basic data. One-way ANOVA and Cohen's *d* with % non-overlap were used. One-way ANOVA did show statistical difference between means, but without the intention of generalize to population. The intention was to show the strength in those special cases. With a larger sample, it might have been interesting to find out whether results could have been generalized to population. In most cases, it was used the Effect Size Calculator. By using the Cohen's *s*, % non-overlap, it was possible to show an alternative way of measured differences between means (Cohen, 1988). Again; the sample was too small and limited to provide any results with the intention to generalize to any population, but showing the strength in difference with % non-overlap, it might give signals of some statistical value in the data (at least with regards to further research).

#### **4.1.6 Satisfaction ratings/psychometrically surveys**

The extent to which one receives the correct answer (i.e. sensorial acceptability) using a questionnaire is always connected to uncertainty in psychometrical surveys (Ringdal, 2007). In this study, if it had been possible to provide a controlled study i.e. measuring the total food intake as well as discard, we might have been able to have been more reliable result's trends.

#### **4.1.7 Bias**

Bias in self-reported energy and nutrition surveys is a common problem in nutrition studies (Hebert, Clemow, Pbert, Ockene, & Ockene, 1995)). To prevent this, the results from the questionnaire were validated with the collected discard. However, full control over all discard from the exercise “Ymer the Viking” was not possible, and this could have had an impact on the analysis of results.

#### **4.1.8 Changes in available arena for Trial**

The initial plan was to conduct the trial at the Russian boarder while the “Boarder Company” at Garrison i Sør-Varanger (GSV), was about to do their yearly 200 kilometres ski march. However, this was unable to be conducted due to problems with importing the different nations’ rations into Norway. Also, financial considerations led to the requested 500 rations being reduced to approximately 250 rations from each nation. This influenced the possible statistical strength of the study. A further problem was that to get rations shipped or transported from Oslo to Kirkenes, where GSV is placed, requires a long transport with higher costs than this study could finance. Consequently a revised study protocol was required. It was considered that the Afghan theatre may be appropriate.

The Afghan theatre is an area in which “ration swopping”<sup>21</sup> is common, and the headquarters (of the Norwegian Armed Forces/Norwegian Army?) was asked if the study could be conducted in the Afghan theatre. To a study of this character, there were clear advantages to conduct the study in Theatre - troops are engaged in a real operation where Allied nations rations could be tested by soldiers in theatre. Further, the usual problems associated with customs and transport did not apply.

However, after several weeks of correspondence between the National Contingent Commander (NCC) in theatre, headquarters and the investigator, approval was not forthcoming. The requirements of a scientific study such as this were not compatible with the operational requirements in a real combat situation. Soldiers’ time for recovery after

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<sup>21</sup> To increase the variety of rations available for consumption, soldiers in the Afghan theatre and other operations, tend to swop rations with soldiers from other nations.

missions was also an important aspect. The request for a trial, unsupported with freshly cooked food or other food over a period of seven days could not be met. Norwegian Armed Forces policy is that while in camp or on base soldiers should be rationed with freshly cooked food and this study would have interfered with soldiers' entitlements in a real combat situation.

These changes, both arena as well as the quantity of the rations, made the planning more difficult than initially hoped for. Thus, sufficient time to pre-test all aspects of the questionnaire became unrealistic.

#### **4.1.9 Reliability analysis for establishing constructs**

However, reliability analysis measuring CCA of the constructs was conducted (Ringdal, 2007). The CCA-value explains the substance or the durability of a phenomenon by using several indicators. If the CCA is high ( $> 0.70$ ) there is not necessary for the actual items of a construct to have gone through previous factor analysis. However, indicators of any construct must be taken into a cognitive consideration. In the construct *Sensorial acceptability*, platoons provided with German (CCA=0.46) and Slovenian (CCA= 0.65) rations had low values of CCA, and thus reduces the reliability of the construct from these rations. In the construct *Interoperability*, platoons provided with German (CCA=0.45) rations had low value, and thus reduces the reliability of the construct from the German rations. In the last construct, *Nutrition*, platoons provided with German (CCA=0.55) and Slovenian (CCA=0.54) rations had low value, and thus reduces the reliability of the construct from the German rations. The reliability or the internal consistence of both the German and the Slovenian construct are probably too low be taken into consideration being a reliable construct (Ringdal, 2007). However, as a pilot study and its intention, the constructs are kept. Beside, the Grand construct *Acceptability*, with a total of 20 indicators made by above mentioned three constructs, had all a relatively high CCA. The German rations with the lowest (0.76), but acceptable level, and three nations' rations above 0.90. However, due to that this was a pilot study; it was kept and used for a larger context (further research).

#### **4.1.10 Reliability**

By using QuestBack and later transmission to SPSS, it reduced manually failure that can occur when data is manually treated. Mentored by supervisor, the transmission of data to SPSS went as planned. Even though paper questionnaire might have increased the sample; the risk for failure had become bigger.

It's said that the only welfare the soldiers have in combat is the food (rations). The investigators opinion confirms this statement, and do believe that it is in the soldiers interest to participate in studies like this. It's probably the only "voice" that can be addressed to people who can make a difference regarding rations and their content. The TMBN staff did also state that they wanted to join this survey due to their belief in being heard regarding field rations and their possible needs for development. This might be a strong motivation to soldiers to answer the questionnaire in a constructive way and thus, be increasing the reliability aspects of this study.

The development of the questionnaire was made "in a hurry" due to the major problems that occurred during the import phase. That means basic theory is used developing the questionnaire, but time was too limited to ensure all aspects of all questions. This might have caused questions that have been understood differently among the respondents. Test-re-test reliability (Ringdal, 2007) was not an option due to the time frame ahead of the survey. Another aspect is that the option "don't know" was removed from the questionnaire, and may have caused a larger "neither or" (3 in Likert's 5-point scale) portion in the results.

Bias in self-reported energy and nutrition surveys is a common problem in nutrition studies (Hebert, et al., 1995). To prevent this, I validated the results from the questionnaire with the collected discard. However, due to that I didn't have the full control over all discard from the exercise "Ymer the Viking", it might have had an impact on the results. Questionnaire send to respondents after conducting a trial may influence the fresh memories from the respondent (Ringdal, 2007). To prevent this possible risk and increase the reliability is to consider facilitating the questionnaire "on-site" i.e. in the field. This to ensure as updated data as possible.

#### 4.1.11 Validity

Validity of a measurement is considered to be the degree to which the tool measures what it claims to measure. Variables were made with the purpose of finding out whether Norwegian soldiers have tried actual rations before, if they have experienced food from that nation or if they have heard anything (e.g. rumours) about those rations before. The questionnaire had several open questions, which gave the respondents the opportunity to comment beside rank their opinion on their provided rations. In this study more than 3/4<sup>th</sup> chose to comment the open questions. In some cases, all respondents commented on them, (e.g. questions about what in the rations they liked best or opposite in).

TMBN had no troops with any food ethnical requirements. However, in a multinational military force (i.e. NRF), there is need to meet requirements like food for troops with Muslim background as well as vegetarians. Some rations that could meet allergens might be needed as well.

##### *Approaches to increase validity*

With regards to the high respondents rate to open questions about most sensorial appreciated components; these answers were compared with questions like “..to what extent did you like NN component?”. If these two matched, the investigator used data from the collected and sorted (most and least appreciated) discard to compare if the respondents saying actually were done in real life. The limitation to this master thesis is the lack of analysing data by using triangulating (Ringdal, 2007). The methods of triangulating require more resources than available in this study. However, data is available to further research.

In a study from another military context (De Graaf, et al., 2005), food discard was compared with the 9 point hedonic scale. Every respondent were connected to his/hers discard and correlation coefficient could be provided. If available resources for funding, the statistics might be more reliable for a later follow up study.

##### *Internal validity*

Internal validity regards cause-effect or causal relationships and du to this; internal validity is only relevant in studies that try to establish a causal relationship and by using the *Gold standard* with *doubled blind* test, the internal validity will be high (Aalen, et al., 2008). In



this study, it's appropriate to question the internal validity by several reasons; lack of randomized sample and lack of blinded ration test. However, whether sample was randomized or not, and whether the different platoon's soldiers had a different signature than soldiers in other platoons, it was not possible to fulfil for this study. The cost and time frame was not available. The question should have been raised as an issue if this or a similar study should be provided in a larger frame. Regarding this study, the TMBN staff randomized as good as they could. And with regards to the demographical data, it seems quite randomized. However, with regards to the platoon provided with the British rations, their mean age was higher than all other platoons (staff officers), and may have influenced the results compared to the other platoons.

The questions in the questionnaire may give results, which point out the respondents to be more prejudice than they really are (Edwards, Meiselman, Edwards, & Leshner, 2003). The sample was very limited, and the constructs *Nutrition and Sensorial acceptability*, might give the wrong trends. It might give good trends as well, but the sample size provides without doubt a weakness in the results (Ringdal, 2007). However, even though if a small sample tends in direction of prejudice, this might be important to know before a possible new and larger study takes place. This is to confirm whether a double blind study should be provided or not. A *doubled blind* (as mentioned) test is a method that is recommendable to such a test, but the cost will be much higher than the alternative (Aalen, et al., 2008).

During exercise "Ymer the Viking", it was heard by a platoon leader that "*I hope we don't get the German rations!*" The statement from the young officer was due to his long time experience with German rations and as goes for our soldiers provided with Norwegian rations; they seem to have the same attitude towards Norwegian rations during this exercise. Some expressed that "*I planned to bring my own food to this exercise and now I'm asked to eat our Norwegian rations- again!*" Splitting up the platoons was not an issue, neither mixing different rations in a platoon. This to be sure that one platoon's soldier wasn't able to find alternative rations during field exercise. Soldiers in a platoon can influence each other during field exercise. However, the questionnaire was available to the respondents two weeks after the exercise, and was answered individually.

One study has described the combination of expectations and the appropriateness for the eating situation (Hui, 2006). This combination for soldiers is might very suitable for soldiers having their meal in the field and they will most likely, due to their experience, have a great deal of expectations regarding their ration. Hopefully it's possible to provide affective measurement as well. On the other hand, an NRF soldier without any international experience (i.e. swopping Allied nations rations) is not that realistic. Due to this aspect vs. the *doubled blind* study, the expression "a man eats with his eyes" is appropriate to use here. The expectations a soldier has to a new ration will might be assimilated in the acceptability process, due to the prejudice factor.

#### *External validity*

The sample's size came out wrong in relation to make adequate statistical analysis. Respondent rate was without doubt too low to achieve sufficient statistics. However, the sample, their platoons specialized in a certain areas (e.g. respondent rate is similar to the population in some cases), might give the trends some more credit. Low response rate but a rather high real response in accordance to the real population. Another aspect is that TMBN is one out of few units with professional soldiers. Their experience in eating Allied nations rations during exercise or operations can be seen as an advantage to the validity of this study. They might understand this studies goal more than inexperienced soldiers. Around 70% had tried one or more Allied nation's rations before. Due to this more than 2/3<sup>rd</sup> of the respondents are experienced rations consumers and thus, might be more "qualified" for this study than others. At least, their voice is valuable to a study like this.

## 4.2 Result discussion

This sub-chapter will focus on the main findings with regards to the overall goal of acceptability, *Norwegian soldier's acceptance for Allied nation's rations during exercise* and thereafter with regards to the corresponding research questions that are linked to three main constructs, created from the three aspects *Interoperability*, *Behaviour* and *Nutrition*. Out of 178 participants in the study, 93 responded (52%).

### 4.2.1 The constructs

The constructs in this Master's thesis are defined and treated equally with regards to the possible and statistical weighting, though the issue of whether it would be wise to weight the constructs is discussed later.

The most acceptable Allied nation's rations came from the USA. Rations from Slovenia ranked almost as high as the American rations. Rations from England were ranked as the third most acceptable rations, just above mean = 3.06. Rations from Canada, Germany and France had all means below 3.00 and as such were deemed unacceptable.

#### *Sensorial acceptability*

In earlier research the American colonel, Roland Isker, seems to have chosen to use the acceptability as like/dislike without considering any other aspects as expectations and or interoperability aspects. "In one sense acceptability is the final determinant of the nutritional adequacy of the ration" (Foundation, 2010) <sup>22</sup>.

The construct made by the research question about *Sensorial acceptability* ended up with the following ranking of participating nations' rations:

1. USA

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<sup>22</sup> Isker, who is known as a former colonel before and during World War II, paid a lot of interest in how to feed troops in a sufficient way. Since then this has been a great issue by all field commanders.

2. Slovenia
3. Canada
4. England
5. Germany
6. France

Only one nation's rations came under the limit of acceptability set at mean = 3.00. That suggests that five out of six Allied nations can provide Norwegian soldiers in an NRF operation without any risk of mal nutrition with regards to lack of energy intake from the standpoint of acceptability. A *Sensorial acceptability* mean with regards to Allied nation's rations is set at minimum 3.00. In USA Army, when using the 9-point Hedonic scale, acceptable level is usually set at minimum 6.00. If transferred to this study and 5-point Likert's scale, an acceptable mean would be set at 3.50 (4.00 = like fairly well and 5.00 = like a lot). However, (unlike the American scale) this study does not weight the means between any of the constructs. With regards to taste and it's value when measuring *Sensorial acceptability*; taste is the primary driver of consumer interest (Cardello & Schutz, 2003). In addition, I suggest that variety and hunger for something new, may also drive interest to some degree. I suggest that announcements like; "this product is new to us!", will influence a soldier's choice and preference in the field, at least up to the "first bite". From another perspective, voiced (stated) opinions that increased food intake, correlate with recognisability, while food with no associations, seems not to be the natural preferred choice and can cause prejudice that might cause a non-sufficient food intake (H. L. Meiselman, 2009).

#### *The extent of prejudice*

While gathered at the beginning of the exercise, when the different platoons had received their rations, some degree of prejudice occurred. Either due to the size, wrapping or the language of the ration packs. US Meals Ready to Eat (MRE's) rations gained the status as favourite, while the rather unknown rations from Slovenia, with perhaps the most strange or unexpected wrapping, gained a negative prejudice. Due to the relatively high rating scores for rations from Slovenia, it might be possible to conclude that the effect of prejudice is negligible.

However, according to Table 21 to 27, it seems that there are some food components that are more and less popular than others. The following discussion compares the different components (and groups of components) of the participating nations' rations. This is based on the results from above mentioned tables. Results will be compared with results of the open and the closed questions from the questionnaire as well as the results from the discard collecting process. Due to more than 450 components divided into four to six component groups, the focus will be on the most interesting findings as well as comments.

#### *Respondents answers due to Sensorial acceptability during different contexts*

This study was conducted during an exercise very much alike a typical imagined NRF mission. However, it might be difficult to pronounce how a NRF mission can be and other context when soldiers are fed by rations must take into consideration. In addition, how would the soldiers respond to *Sensorial acceptability* at home or other far more familiar contexts? Since seven different platoons, which might had different contexts, the results must be taken into consideration that different context may have influenced the results and therefore might not be scientifically correct to compare result the way provided in this study.

#### *Nations rations components – sensorial acceptability (popularity)*

##### **USA**

The group of Lunch/Dinner rations had a high mean (3.99), but one product received an extremely low rating, which caused the mean to drop below 4.00. *Spaghetti, Ravioli, Hash brown, Beef enchiladas and Chicken fajita* were Lunch/Dinner rations with a mean score of 4.50. According to open answers, *Sloppy Joe* was the most popular main course. According to the discard list, all main courses that were registered, had discard of less than one open pouch, with one exception; *New England clam chowder*, which had more than 11 pouches left in discard. “*To make the Clam Chowder good, you have to take the wheat bread, split/break/cut it in to pieces and then add the Tabasco sauce*” (US soldier in Camp Nidaros, Afghanistan 28<sup>th</sup> June 2010).

Comments from open questions confirmed *Clam Chowder* to be the least popular item.

Among Snacks, the *Cookie* and *Skittles* had the highest mean score (4.87) among all ration components in the study. There was no discard registered on these products and the comments from the soldiers support the high mean score. The multiple selections of Snacks may have given the soldiers a good ability to choose and also trade, if given the opportunity. Snacks like Skittles are a well-known article in the store, and according to literature (H. L. Meiselman, 2009), this might have enhanced the intake of this component.

### **Slovenia**

The group of Lunch/Dinner had a high mean (4.06), but comprised only one-fourth of (the variety of the American selection. Most groups of components had an acceptable mean, with the exception of the Spreads (2.74). One fish spread (Tuna in olive oil) was popular, but three others were ranked the lowest among all Spreads. The discard list confirmed three fish spreads as the least popular. The comments confirmed the same, but were a bit unclear as to the different product names. There might be several reasons for this result. There were no recognisable products (H. L. Meiselman, 2009), and the labelling (language) was not understandable to the Norwegian soldiers.

SVN provided TMBN's soldiers with rations that received above average good responses from the soldiers. Slovenia's rations did not have a large variety. According to literature; monotony in foods offered, even those with high acceptance, will generate declined food intake within a short period of time (H. L. Meiselman, et al., 2000). However, the rate at which Slovenia's rations reduced acceptance from the first to the last day during the 8-day exercise did not differ significantly from other nations' with lower acceptance means.

### **Canada**

No Lunch/Dinner component had a mean score at or above 4.00. The *Beef Pot Roast with Mushroom Sauce* had an acceptable mean score of 3.87, with a relatively low S.D. of 1.07 (ranked as No 5 in this component group). However, according to the discard list, the most discarded item from this group was this particular main course. There were no comments from the open questions that can clarify this. The only comments received regarding unpopularity with Canadian Lunches / Dinners, stated that "anything with cheese" was unpopular.

Canada has a few products that might be considered as more or less the same as what we find in the American rations. However, the means are not comparable. USA's Beef Ravioli and Chicken Fajita had mean scores around 4.50, while the Canadian equivalents were given mean around 3.70. It might be that there are different producers or recipes (not checked), but a doubled blind study could contribute to more understanding of this aspect.

### **England**

One-fourth of the Lunch/Dinner rations from UK had mean at or above 4.00. Two-thirds were around 3.00, and four main courses were given means below 3.00. The mean of the component group was 3.30. The British, like the Americans, have Tabasco in their rations. Mean score is different (GBR 4.00 vs USA 4.64). The numbers of "American" respondents is twice that of the "British", but the difference is higher than expected on identical products. In the British ration, the *Chicken Sweet & Sour Pasta* had the highest mean (4.20). Compared to Norwegian surveys (Ipsos, 2008; Opinion, 2008), a Norwegian product with the same name was among the least popular products, but this difference could be (explained by different recipes, or by) pouches (UK) vs. freeze-dried (NOR) food.

All (UK) Breakfast rations (products) were rated at or above 3.00. Canada and Slovenia (and Norway) in addition to England have breakfast meals in the ration. All nations with Breakfast products had Breakfast means above 3.30.

The most popular Snack item was the biscuit, and this was confirmed with no registered discard. The most popular Main Dish (Lunch/ Dinner?) was according to the comments the *Mexican Tuna*, but with a mean 3.30 and a high S.D. 1.57, it seems that respondents disagree on this product.

### **Germany**

Germany and Slovenia both have six lunch/dinner options. The mean score was 3.96 and two main dishes were below 4.00. German rations had no Snack with a means at or above 4.00 and no Spreads or Beverage with a a mean score above 3.00. With regard to nutritional aspects, Spreads made of meat, with recommended values of fat, protein and carbohydrates were ranked as the least popular components. Jam and honey, with only carbohydrates, were ranked as the most popular. From a nutritional point of view; the

whole rye bread, with a mean score of 3.06 and S.D at 1.57, was the source of many comments and was a regular item in the discard list. This was a typical product that was either loved or hated. As two respondents commented the bread: “*The bread that looked and tasted like cork board*” and “*Rye bread was brilliant. I have never had so well balanced stomach in the field before!*” Constipation is a normal problem in field (Forbes-Ewan, 2009) and this bread could have provided regular stomach to many soldiers. However, the signal given in the first comment and confirmed by the rather large amount of discard, suggests that soldiers need to be informed of the extra value of the bread.

### **France**

France had the largest selection of Lunch/Dinner options in the test. However, the selection seems not to have met the soldiers’ sensorial approval. At least not according to the mean = 2.27. One of the study’s most popular items (in the component group Lunch/Dinner) was the French Lasagne with beef (4.63). The second most popular French main course was Oriental Salad (3.20). All Spreads were given means below 3.00 and Beverages had means below 4.00. French food is perhaps known for high quality, but with regards to this study, this reputation seems difficult to confirm. According to a newspaper article (Kluge, 2010), American soldiers like to trade for French rations.

In this study, Snacks of fruit bars and cheese (several) were the least popular items according to the comments. Looking at the discard list, both *cheese fondue* and *fruit paté* were regularly discarded. The French biscuit was popular, and ranked highest among Snacks, with no registered discard and with several positive comments in the open questions. Other aspects than the sensorial might have influenced the mean score from the French rations. Both the interoperability difficulties as well as small rations (3200 kcal) may have been secondary causes to the results.

### *Ration exposure over eight days*

According to the article, “The effects of variety and monotony on food acceptance and intake at a midday meal”, a week without variety influenced acceptance and declined consumption. A week with variety increased or maintained status quo on consumption (H. L. Meiselman, et al., 2000). In this study, when measuring the reduced acceptability over eight days, the French ration decreased the most with 20 % from day one to day eight. The



Canadian rations decreased only 6 %. This might show that some rations can contribute to declined food intake for periods at a week as well. Related to Annex 4, which describes the variety in the different nation's rations, we might see a trend due to correlation between low reductions in acceptance vs. multiple choices in the rations. Nations such as Germany (10 %) and Slovenia (11 %) has similar (and limited) variety in the rations while CAN (6%) have a larger variety in the rations. US (10 %) and GBR (15 %) rations, both with large variety, did not confirm the possible trend in correlation as CAN. However, GBR and USA, both with a larger variety in main dishes (Lunch/Dinner as well as Snacks, still had a reduced acceptance rate larger than that of German, Slovenian or French rations.

### ***Interoperability***

The construct made by the research question about *Interoperability* ended up with this ranking:

- 1 Slovenia
- 2 USA
- 3 England
- 4 Germany
- 5 Canada
- 6 France

Four nations' rations came under the limit of acceptability set at mean = 3.00. That means (suggests that) only two out of six Allied nations can provide Norwegian soldiers in an NRF operation without any risk of interoperability aspects that might prevent an acceptable food intake and therefore risk not maintaining recommended nourishment. However, it is difficult to set a mean that is or is not acceptable for this aspect. Both questionnaire and the validation of the soldiers real food intake (discard collecting and counting) confirm that rations have been consumed. Maybe not every day, but on average during the 8-day exercise, the food has been eaten.

*The logistical importance of having only one ration available in NRF operations.*

During the exercise “Ymer the Viking”, some difficulties occurred in the attempt to provide seven different nations’ respective ration concept to the seven platoons. There were distribution problems with rations from CAN and USA, caused by the fact they operate with a 1/3 rations concept. For these countries, one ration is only one-third of one regular 24 hours ration<sup>23</sup>. Canada’s ration concept is slightly different; it divides a day’s rations into the three main meals; labelled breakfast, lunch and dinner. The investigator provided this information of “on site” at the distribution point. Then there is the importance of providing the different nations’ full variety of respective ration packs. Providing small units or troops such as those in this exercise, with requirements of efficiency to the CSS battallion, might easily result in a unit or a platoon in a armoured vehicle receiving only one menu (e.g. one breakfast menu from CAN), which might in turn result in a more rapid rate of menu fatigue than could be expected if the same unit were provided with regular quality ensured assortment.

Another aspect than could have influenced the food intake during the study is the difference in the practical environments/contexts in the different military vehicles used by the TMBN. Comparing food consumed in a vehicle with food consumed in a staff facility will also be an object for a discussion. Both the tasks and contexts are different among the platoons provided with the different nations’ rations. However, in the course of the days and nights of the 8-day exercise, the context varies widely for all personnel, both those in vehicles and those assigned to staff facilities. Thus the different contexts is unlikely to cause differences so great that the survey loses its value, but it is important to bear this variable in mind during the analysis and recommendations and conclusions.

### ***Nutrition***

The construct made by the research question about *Nutrition* ended up with this ranking:

1. USA
2. Slovenia
3. England

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<sup>23</sup> Based on the actual nations’ nutritional need for 24 hours.

4. Canada
5. Germany
6. France

The results of the two recent constructs will (in large part?) explain the real nutritional value of the different nation's rations. They can both lead to reduced food intake. The main purpose of this construct was to measure the soldier's faith or belief in the provided Allied nations rations. It might be difficult to find out the value of this construct with regard to the food intake, but it will probably give rations developers a signal of the nutritional reliability of the rations from a soldier's point of view.

Two nations rations came under the limit of acceptability set at mean = 3.00. This suggests that only two out of six Allied nations can provide Norwegian soldiers in an NRF operation without any risk of negative prejudice regarding to their rations. However, it's difficult to determine a mean that is acceptable for this aspect. Both questionnaire and the validation of the soldiers real food intake (discard collecting and counting) confirm that rations have been eaten, regardless the soldiers' rating of the food. Still it is interesting to measure the soldiers' faith in the value of the provided rations.

### ***Other studies***

Few if any studies have been conducted which compare different nations' rations in terms of acceptability. Thus, providing a pro ET contra discussion with references to other studies proves difficult. However, acceptability studies similar to this study have been conducted, using only the national rations provided for trial. This might be valuable to achieve a better understanding of the present study's findings and/or results.

Norwegian rations were tested in 2008 (Ipsos, 2008; Opinion, 2008). Both studies agreed on the same result regarding Lunch/ Dinner rations; Pasta was popular and fish courses were the least popular ones. The "*Royal Thai*" was ranked as the least popular in both earlier studies, as it also is in this study<sup>24</sup>. However, according to a trial conducted by the

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<sup>24</sup> Producer has no longer this product available.

British MoD (Verrall, Wood, & Horwood, 2008), fish acceptance seemed lower than in actually was. With only a 5 % wastage (discard) rate on fish meals, they suggest that this perception might have been over estimated. During above mentioned trial, British soldiers were exposed to Norwegian rations (Verrall, et al., 2008). Results were good, and concluded that with some adjustments in the menu, the Norwegian rations were acceptable to British troops.

In Australia, a field trial was conducted to their troops (Stephenson, Cavanaugh, & Driver, 1998). They were testing new rations components, and Snack products like *Mixed nuts* were the most acceptable product in this trial. The American Long Range Patrol Packet was also tested (Johnsen & Kramer, 2007). Most components tested and found acceptable to American soldiers (scale response between “like slightly” and like “moderately”) were the same as products that Norwegian soldiers accepted. However there was one exception; New England clam chowder, which Norwegian soldiers don’t seem to appreciate at all.

## **5 CONCLUSIONS AND IMPLICATIONS FOR FURTHER RESEARCH**

Norwegian soldiers can probably not be provided with all available Allied nations' rations. In this study, rations from the USA, Slovenia and Great Britain met or exceeded the requirements set. Rations from Germany, Canada and France did not meet those requirements. The limited sample size of this pilot study, conducted during the exercise "Ymer the Viking" caused a somewhat less reliable result than planned, but low sample size is compensated for in part through the use of available statistical methods and through the quality accounting of discard. Therefore, many of the results are likely applicable on a larger scale. However, the idea of this pilot study was to create a template or a recipe for other Allied nations, who might be interested in measuring Allied nations rations to their soldiers. Beside, according to this study, it seems difficult to assume or predict any results regarding Allied nations rations to their corresponding soldiers. This due to two aspects that may be worthwhile to repeat:

- (i) Large variety is supposed to increase food behaviour or acceptability. Slovenia did not meet those standards, but was ranked almost as high as rations from USA.
- (ii) France, who is known (famous) for its cooking as well as food culture, did no meet those expectations or positive prejudice that our soldiers might had.

The present investigation, with "local modifications", is suggested as a suitable model for the study of acceptance for field rations during exercise. The model may also give information about critical short term nutrition/energy adequacy provided by the different rations. When planning a study along the lines presented, special considerations should be taken as early as possible to:

- (i) Number of attendants, experimental period, number of items to be included and statistical methods.
- (ii) Collection and registration of "leftovers".
- (iii) Brief of group/platoon leaders by researching team.
- (iv) Brief of soldier by their group/platoon leaders.
- (v) Use of paper and/or electronically questionnaire

Should the Allied nations be interested in conducting a study like this on a larger scale, it might be wise to consider weighing the different constructs. Two of them, *Sensorial acceptability* and *Interoperability*, might have more direct influence on food intake than the last construct, *Nutrition*, which in this study is determined by nutritional aspects (i.e. soldiers belief in the nutritional value of the provided rations). The first mentioned constructs are thus likely more vital to the actual nourishment of a soldier. The sensorial aspect is clear; if they don't like it, they probably want eat it, and vice-versa. The Interoperability aspect is more complex, but reflects overall how the ration can be consumed in the field, in operations or during exercise.

One aspect of studies like this is; its real goal - soldier satisfaction, combat morale or not starving to death? The rations probably won't kill them directly, but indirectly there might be several scenarios. Lack of both (as well as one of them) energy and nutrients will over time cause reduced performance. Optimal nutrition is connected to optimal performance as demonstrated in several military studies (Forbes-Ewan, 2009; NATO, 2010). Moderate loss of body weight, (5%), may however, be tolerated as shown in several studies (Booth, et al., 2001; Fogelholm, et al., 1993). However, nutrition is not only a question about food; water has to be included as well. This was addressed with the question: "*The extent to which officers affected you to drink enough?*". 93 respondents answered this question and mean was low as  $2.24 \pm 1.13$ . (The similar question regarding food intake gave a mean almost as low on this question ( $2.31 \pm 1.13$ )). To maintain adequate hydration, water must be consumed even when not thirsty. Many aspects as stress, heat, physical activity etc. may influent a negative water balance and dehydration. Even lower levels of dehydration, constipation and reduced desire to eat are known effects that may impair performance (Murray, 2007). Thus a plan scheduled for drinking is of vital importance. This master thesis study involved an exercise with only moderate physical activity. The food intake through provided rations was probably sufficient. But, according to the questions related to water intake, hydration might have been a problem.

## **6 CO-OPERATORS AND PARTNERS**

Akershus University College will provide me with guidance and Dr. Sverre Pettersen will be the internal supervisor. As an external supervisor I have got a former Professor from the University in Oslo, Halvor Holm.

In co-operation with Norwegian Defence Institute / Norwegian University for Sports I will co-ordinate a questionnaire which provides any questions related to their needs in area that are familiar with this thesis.

Norwegian Armed Forces Telemark Battalion, that on a short notice accepted the necessary scientifically requirements for this study.

Allied nations that provided field rations: USA, Canada, Germany and Republic of Slovenia. Other countries that Norwegian troops already had bought rations from: Belgium (produced by the French Army) and Great Britain.

US Army and Akershus University College have a Cooperative Research and Development Agreement (CRADA) due to this study.





## 7 REFERENCES

- Aalen, O. O., Frigessi, A., Moger, T. A., Scheel, I., Skovlund, E., & Veierød, M. B. (2008). *Statistiske metoder i medisin og helsefag*. Oslo: Gyldendal forlag.
- Baker-Fulco, C. J., Patton, B. D., Montain, S. J., & Lieberman, H. R. (2001). *Nutrition for health and performance. nutritional Guidance for Military Operations in Temperate and Extreme Environments* (No. USARIEM Technical Note TN-01/4). Boston: USARIEM.
- Becker, L. A. (2010). Effect Size calculator. Retrieved 2010 November 14th, from <http://www.uccs.edu/~faculty/lbecker/>
- Booth, C., Coad, R., Forbes-Ewan, C., Thomson, G., & Niro, P. (2001). *The effect of consumption of Australian combat rations on military personnel after a medium-term field exercise*.
- Bullock, S. H., Jones, B. H., Gilchrist, J., & Marshall, S. W. (2010). Prevention of Physical Training-Related Injuries: Recommendations for the Military and Other Active Populations Based on Expedited Systematic Reviews. [doi: DOI: 10.1016/j.amepre.2009.10.023]. *American Journal of Preventive Medicine*, 38(1, Supplement 1), S156-S181.
- Cardello, A. V., & Schutz, H. G. (2003). The Importance of Taste and Other Product Factors to Consumer Interest in Nutraceutical Products: Civilian and Military Comparisons. *Journal of Food Science*, 68(4), 1519-1524.
- Cervellon, M. C., & Dubé, L. (2005). Cultural influences in the origins of food likings and dislikes. [doi: DOI: 10.1016/j.foodqual.2004.09.002]. *Food Quality and Preference*, 16(5), 455-460.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.): Hillsdale, NJ: Lawrence Earlbaum Associates.

- De Graaf, C., Kramer, F. M., Meiselman, H. L., Leshner, L. L., Baker-Fulco, C., Hirsch, E. S., et al. (2005). Food acceptability in field studies with US army men and women: relationship with food intake and food choice after repeated exposures. [doi: DOI: 10.1016/j.appet.2004.08.008]. *Appetite*, 44(1), 23-31.
- Edwards, J. S. A., Meiselman, H. L., Edwards, A., & Leshner, L. (2003). The influence of eating location on the acceptability of identically prepared foods. [doi: DOI: 10.1016/S0950-3293(02)00189-1]. *Food Quality and Preference*, 14(8), 647-652.
- Fogelholm, G. M., Koskinen, R., Laakso, J., Rankinen, T., & Ruukonen, I. (1993). Gradual and rapid weight loss: effects on nutrition and performance in male athletes. *Medicine & Science in Sports & Exercise*, 25(3), 371-377.
- Forbes-Ewan, C. (2009). *Australian Defence Force Nutritional Requirements in the 21st Century (version 1)*.
- Forces, N. A. (2008). Ymer the Viking. Read on the Internet, 21st October 2010., from <http://www.mil.no/start/article.jhtml?articleID=170144>
- Foundation, U. A. Q. (2010). Colonel Roland A. Isker. from [http://www.qmfound.com/COL\\_Roland\\_Isker.htm](http://www.qmfound.com/COL_Roland_Isker.htm)
- Friedl, K. E., & Hoyt, R. W. (1997). DEVELOPMENT AND BIOMEDICAL TESTING OF MILITARY OPERATIONAL RATIONS. *Annual Review of Nutrition*, 17(1), 51-75.
- Haraldsen, G. (1999). *Spørreskjemametodikk - etter kokebokmetoden*. (Vol. 1. utgave, 1. opplag). Oslo: Ad Notam Gyldendal AS.
- Hebert, J. R., Clemow, L., Pbert, L., Ockene, I. S., & Ockene, J. K. (1995). Social Desirability Bias in Dietary Self-Report May Compromise the Validity of Dietary Intake Measures. *Int. J. Epidemiol.*, 24(2), 389-398.
- Henriques, A. S., King, S. C., & Meiselman, H. L. (2009). Consumer segmentation based on food neophobia and its application to product development. [doi: DOI: 10.1016/j.foodqual.2008.01.003]. *Food Quality and Preference*, 20(2), 83-91.

- Hui, Y. Y. (2006). *Handbook of Food Science Technology and Engineering* (Vol. 2).
- Ipsos. (2008). *Survey Norwegian Field rations. A qualitative study*.
- Jaeger, S. R., & Cardello, A. V. (2007). A construct analysis of meal convenience applied to military foods. [doi: DOI: 10.1016/j.appet.2007.02.001]. *Appetite*, 49(1), 231-239.
- Johannessen, A. (2008). *Introduksjon til SPSS*.
- Johannessen, A., Tufte, P. A., & Kristoffersen, L. (2008). *Introduksjon til samfunnsvitenskaplig metode*.
- Johnsen, W., & Kramer, F. M. (2007). *Evaluation of the long range patrol packet. Final report 2004-2006*. . Natick, Massachusetts: US Army Natick Soldier Research, Development and Engineering Center.
- King, S. C., Meiselman, H. L., & Henriques, A. S. (2008). The effect of choice and psychographics on the acceptability of novel flavors. [doi: DOI: 10.1016/j.foodqual.2008.05.003]. *Food Quality and Preference*, 19(8), 692-696.
- King, S. C., Meiselman, H. L., Hottenstein, A. W., Work, T. M., & Cronk, V. (2007). The effects of contextual variables on food acceptability: A confirmatory study. [doi: DOI: 10.1016/j.foodqual.2005.07.014]. *Food Quality and Preference*, 18(1), 58-65.
- Kluge, L. (2010). Stridsrasjoner i Afghanistan. Published 22nd October 2010. . *Aftenposten, A-magasinet*.
- Kreyberg, L. (1948). Konsentrerte rasjoner for lang tids bruk ved små avdelinger: militærmedisinsk meddelelse nr 4 [særtrykk] *Tidsskrift for Den norske Lægeforening*(14/15).
- Mariott, B. M. (1995). Not eating enough: Overcoming under consumption of Military Operational Rations.
- Meiselman, H. L. (2009). *NATO ration characteristics likely to increase/decrease consumption* (Report).

- Meiselman, H. L., deGraaf, C., & Leshner, L. L. (2000). The effects of variety and monotony on food acceptance and intake at a midday meal. [doi: DOI: 10.1016/S0031-9384(00)00268-7]. *Physiology & Behavior*, 70(1-2), 119-125.
- Meiselman, H. L., & Schutz, H. G. (2003). History of food acceptance research in the US Army. [doi: DOI: 10.1016/S0195-6663(03)00007-2]. *Appetite*, 40(3), 199-216.
- Murray, B. (2007). Hydration and Physical Performance. *J Am Coll Nutr*, 26(suppl\_5), 542S-548.
- NATO. (2010). *Nutrition Science and Food Standards for Military Operations: RTO Technical Report TR-HFM-154: Final Report of RTO Task Group RTG-154: Research and Technology Organisation of the North Atlantic Treaty Organisation* (No. ISBN 978-92-837-0097-5.): Neuilly-sur-Seine Cedex, France. NATO, Research and Technology organisation, Task Group RTG 154.
- Opinion. (2008). *Brukerundersøkelse norske feltrasjoner*.
- Pallant, J. (2007). *SPSS: Survival manual* (3 ed.).
- Pieniak, Z., Verbeke, W., Vanhonacker, F., Guerrero, L., & Hersleth, M. (2009). Association between traditional food consumption and motives for food choice in six European countries. [doi: DOI: 10.1016/j.appet.2009.05.019]. *Appetite*, 53(1), 101-108.
- Prescott, J. (1997). Food Choice, Acceptance and Consumption. *Trends in Food Science & Technology*, 8(4), 128-129.
- Rees, A. M. (1992). Factors influencing consumer choice. *International Journal of Dairy Technology*, 45(4), 112-116.
- Ringdal, K. (Ed.). (2007). *Enhet og mangfold: samfunnsvitenskaplig forskning og kvantitativ metode* (Vol. 2).
- Sluik, D., De Graaf, C., De Groot, C. P. G. M., & Cavelaars, A. E. J. M. (2008). *Recommendations for nutrient compositions of combat rations for the NATO*

*Respons Force: energy and nutrient recommendations and considerations of current combat rations*: Wageningen University.

Stephenson, T. N., Cavanough, P. J., & Driver, G. I. (1998). *Acceptability of the Patrol Ration One Man*. Melbourne: Departement of Defence. Defence Science and Technology Organisation. Combatant Protection and Nutrient Branch. Aeronautical and Maritime Research Laboratory.

Verrall, N. G., Wood, P. M., & Horwood, N. (2008). *Rewiew of Trial Dehydrated Field Ration: Royal Marine Winter Deployment 2007-2008*. Bath: Ministry of Defence DSTL.

WHO. (2010). BMI classification. Retrieved 2010 October 17th, from [http://apps.who.int/bmi/index.jsp?introPage=intro\\_3.html](http://apps.who.int/bmi/index.jsp?introPage=intro_3.html)

Wikipedia. (2010). Telemark Battalion. Read on the Internet 21st October 2010 from [http://no.wikipedia.org/wiki/Telemark\\_bataljon](http://no.wikipedia.org/wiki/Telemark_bataljon)



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Vår dato: 26.11.2009

Vår ref: 22913 / 2 / MAB

Deres dato:

Deres ref:

KVITTERING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 02.11.2009. Meldingen gjelder prosjektet:

22913	<i>Norske soldaters aksept for utenlandske feltrasjoner</i>
<i>Behandlingsansvarlig</i>	<i>Høgskolen i Akershus, ved institusjonens øverste leder</i>
<i>Daglig ansvarlig</i>	<i>Sverre Pettersen</i>
<i>Student</i>	<i>Pål Harald Stenberg</i>

Personvernombudet har vurdert prosjektet og finner at behandlingen av personopplysninger er meldepliktig i henhold til personopplysningsloven § 31. Behandlingen tilfredstiller kravene i personopplysningsloven.

Personvernombudets vurdering forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, vedlagte prosjektvurdering - kommentarer samt personopplysningsloven/-helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, [http://www.nsd.uib.no/personvern/forsk\\_stud/skjema.html](http://www.nsd.uib.no/personvern/forsk_stud/skjema.html). Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, <http://www.nsd.uib.no/personvern/prosjektoversikt.jsp>.

Personvernombudet vil ved prosjektets avslutning, 31.12.2010, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

  
Bjørn Henrichsen

  
Marte Bertelsen

Kontaktperson: Marte Bertelsen tlf: 55 58 29 53

Vedlegg: Prosjektvurdering

✓ Kopi: Pål Harald Stenberg, Nedre Berglia 76, 1353 BÆRUMS VERK



Prosjektet går ut på å teste ut ulike lands matrasjoner på norske soldater. Student, Pål Harald Stenberg, er også ansatt i forsvaret.

Utvalget består av norske soldater tilhørende Telemarksbataljonen.

Prosjektet er todelt. Prosjektet er sent meldt inn til personvernombudet, og første del av prosjektet er allerede gjennomført.

Først del av prosjektet gikk ut på å gi soldater i øvelse ulike lands matrasjoner.

Andre del av prosjektet er en webbasert spørreskjemaundersøkelse. I spørreskjemaet blir det spurt om soldatenes opplevelse av de ulike lands matrasjoner, i tillegg til at spørreskjemaet inneholder en del indirekte personidentifiserende variabler. Spørreskjemaet vil bli lagt ut på en del pc'er i militærleiren, hvor de av soldatene som ønsker å delta i undersøkelsen i løpet av en uke kan gå inn på pc'ene og fylle ut skjemaet.

Det gis ut muntlig og skriftlig informasjon. Utfylling av spørreskjemaet regnes som et samtykke til å delta i undersøkelsen. Revidert informasjonsskriv, mottatt av personvernombudet 24. nov. 09, finnes tilfredsstillende.

Ingen enkeltpersoner vil kunne gjenkjennes i den ferdige masteroppgaven.

Personvernombudet legger til grunn at det er avklart med Høgskolen i Akershus at data kan lagres på privat PC.

Prosjektet avsluttes 31.12.2010. Da skal datamaterialet anonymiseres. Anonymisering innebærer at direkte personidentifiserende opplysninger som for eksempel navn/navneliste, og indirekte personidentifiserende opplysninger som for eksempel alder, kjønn, grad, høyde og vekt, endres/grovkategoriseres eller slettes.



## ANNEX 2: ELECTRONICALLY QUESTIONNAIRE ORIGINAL VERSION IN NORWEGIAN

### Test av allierte nasjoners feltrasjoner

Hei

Jeg er en masterstudent i ernæring ( mat, ernæring, helse) ved Høgskolen i Akershus (HiAK). I tillegg arbeider jeg i Forsvarets logistikkorganisasjon. Jeg er nå i gang med min avsluttende masteroppgave hvor jeg ønsker finne ut i hvilken grad norske soldater aksepterer allierte lands feltrasjoner. Dette på bakgrunn av en NATO-rapport, hvor 12 land inkludert Norge v/undertegnede, har beskrevet de ulike lands rasjoners egenskaper hva angår ernæring og atferd. Med tanke på fremtidige NRF-opdrag, har våre allierte nytte av å vite hvorvidt norske soldater aksepterer feltrasjoner fra allierte nasjoner(og motsatt). Dette med tanke på en forenklet logistikk.

I dette prosjektet har jeg to veiledere; Sverre Pettersen (HiAK) og Halvor Holm (Universitetet i Oslo).

Før feltøvelsen som du deltok på i uke 47 og 48, fikk du et informasjonsskriv hvor jeg også informerte om denne masteroppgave. I løpet av den øvelsen ble du forsynt med feltrasjoner fra enten Tyskland, Slovenia, USA, Canada, England, Frankrike eller Norge. Jeg ønsker nå at du tar deg tid til å fylle ut dette spørreskjemaet hvor jeg stiller deg noen spørsmål angående andre lands feltrasjoner.

Det er frivillig å svare på de etterfølgende spørsmål. Videre utfylling av spørreskjemaet regnes som samtykke til å delta i prosjektet. Alle innsamlede opplysningene vil bli behandlet konfidensielt. Ved prosjektslutt 31.12.2010 vil datamaterialet anonymiseres. Ingen enkelpersoner vil kunne gjenkjennes i den ferdige masteroppgaven.

Bruk gjerne utfyllende kommentarfelt, der dette er mulig.

Du vil som takk for hjelpen med bevarelsen være med i trekningen av to gavekort á kr 1500,- (Intersport Rena). Dersom du ønsker å være med i trekningen av et gavekort, send meg en e-post med din kontaktinformasjon.

Om du lurer på noe ved denne undersøkelsen; ta gjerne kontakt.

Mvh

Pål H. Stenberg

Orlogskaptein/masterstudent

FLO/Systemstyringsavdeling/Soldat- og baseløstikk/Forpleining

E-post: pa-hara@online.no /

Tlf: 99093617

---

**1) Kan du i antall døgn angi lengste periode med kun feltrasjoner som eneste forpleining?**

---

---

I de neste spørsmålene ønsker vi svar på spørsmål knyttet til holdninger til mat, kosthold og ernæring.

**2) I hvilken grad anser du deg selv som en som er nysgjerrig på og som stadig prøver å smake på ny mat?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

---

**3) Om du spiser mat på restaurant i utlandet; i hvilken grad velger du følgende?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
Lokale retter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internasjonale retter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fisk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kylling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Salat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alkoholfri drikke til mat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Øl til mat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vin til mat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

**4) I hvilken grad vil du selv oppfatte din interesse for kosthold og ernæring?**

- I veldig liten grad
  - I nokså liten grad
  - I hverken liten eller stor grad
  - I nokså stor grad
  - I veldig stor grad
- 

**5) Under en øvelse, som den du har vært i gjennom nå; i hvilken grad mener du det er viktig for deg å innta hele feltrasjonen?**

- I veldig liten grad
  - I nokså liten grad
  - I hverken liten eller stor grad
  - I nokså stor grad
  - I veldig stor grad
- 

Forskning fra allierte nasjoner viser til at mellom 20-40 % av energien i en feltrasjon blir kastet under øvelse. Konsekvensen av å ikke ta til seg tilstrekkelig ernæring, kan bli alvorlig.

**6) I etterpåkløskapens ånd, og om du på forhånd visste konsekvensene av å ikke spise nok (og riktig) under øvelse, i hvilken grad ville dette ha påvirket matinntaket ditt for denne øvelsen?**

- I veldig liten grad
  - I nokså liten grad
  - I hverken liten eller stor grad
  - I nokså stor grad
  - I veldig stor grad
- 

**7) Har du inntatt annen mat/drikke enn utdelte feltrasjoner under denne øvelsen?**

	En gang	Et par-tre ganger	Nesten daglig	Daglig	Aldri
Mineralvann	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sjokolade/snacks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gatekjøkkenmat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mat fra butikk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mat med hjemmefra	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Annet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ikke aktuelt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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**8) Har du erfaring fra andre lands feltrasjoner?**

- Ja
- Nei

This box is shown in preview only..  
 The following criteria must be fulfilled for this question to be shown:  
 Har du erfaring fra andre lands feltrasjoner? - Ja

**9) Hvor mange allierte lands feltrasjoner har du erfaring fra/smakt før?**

This box is shown in preview only..  
 The following criteria must be fulfilled for this question to be shown:  
 Har du erfaring fra andre lands feltrasjoner? - Ja

**10) I hvilken grad vil du si at disse er egnet som feltrasjoner for norske soldater?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

**11) Om du mener noen land har feltrasjoner som er bedre egnet enn norske, kan du kort beskrive hvilke(t) land og hvorfor?**

This box is shown in preview only..  
 The following criteria must be fulfilled for this question to be shown:  
 Har du erfaring fra andre lands feltrasjoner? - Ja

**12) I hvilken grad er du enig i følgende påstander om andre nasjoners feltrasjoner?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
Passe mengde mat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Måltidene var for små	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
De så mer appetittelige ut	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
De smakte bedre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
God info om rasjonens innhold	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- |                                     |                       |                       |                       |                       |                       |
|-------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Innpakningen tiltalte meg           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Bedre tilpasset mitt ernæringsbehov | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Mer praktisk å tilberede            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Har du erfaring fra andre lands feltrasjoner? - Nei

**13) Ut fra hva du har lest eller hørt om allierte lands feltrasjoner; i hvilken grad tror du disse er egnet for norske soldater?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

**14) Fra hvilket land fikk du utdelt feltrasjoner?**

- Slovenia
- Tyskland
- USA
- Canada
- England
- Frankrike
- Norge
- ↕

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**15) Har du spist mat i Tyskland eller spist deres feltrasjoner?**

- Ja
- Nei

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**16) I hvilken grad likte du det?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**17) Nå som du har benyttet tyske rasjoner under en øvelse; i hvilken**

**grad mener du at de er bedre egnet en norske feltrasjoner?**

- I veldig liten grad  
 I nokså liten grad  
 I hverken liten eller stor grad  
 I nokså stor grad  
 I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**18) I hvilken grad mener du følgende aspekter er årsak til det?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
Så mer appetittelig ut	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smakte bedre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spennende innhold	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre variasjon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre tilpasset mitt ernæringsbehov	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Praktisk å tilberede	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre funksjonalitet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mindre avfall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lettere å håndtere avfall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**19) Her kan du eventuelt kommentere hvorfor du mener de egner seg bedre eller dårligere enn de norske feltrasjonene?**

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

Tyskland og øvrige allierte i NATO har en noe ulik matkultur hva angår for eksempel hva en skal spise (til hva) og når.

**20) I hvilken grad klarte du å tilpasse deg bruken av tyske feltrasjoner?**



	veldig liten grad	nokså liten grad	eller stor grad	nokså stor grad	veldig stor grad
Etter første dag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Midtveis?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Etter siste dag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**24) I hvilken grad er du alt i alt fornøyd med følgende komponenter fra de tyske feltrasjonene?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke benyttet
Hele rasjonen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hovedmåltid lunsj/middag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av pålegg?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av snacks og annet tilbehør?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av drikker?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**25) I hvilken grad likte du lunsj- og middagsrettene fra Tyskland?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist
Indian rice stew with minced poultry steaks?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ravioli in mushroom Sauce?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goulash with potatoes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hamburger with tomato sauce?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rice stew with minced meat rolls?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
South American vegetable chilli?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

Tyskland har ikke egne frokostretter, slik du er vant med fra våre og kanskje andre lands feltrasjoner. I det følgende spørsmålet vil derfor alle komponenter som tyskerne benytter som frokost, kvelds, snack/mellommåltid og drikke omhandlet her.

**26) I hvilken grad likte du følgende pålegg, snacks og annet tilbehør fra Tyskland?**

	I hverken					
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist
Mellommåltid (flere typer 150 grams): "Zwischenmahlzeit"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pålegg: "Liberwürst, Bierwürst, Rindfleischschinkenwurst m.fl?"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brød: "Roggenschrotbrot"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Syltetøy: "Konfitüre"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kjeks: "Hartkaks"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sjokolade: "Schokolade"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Snack: "Caramel Candy, Mint Chocolate, Chip Candy"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tyggegummi: "Kaugummi"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Honning: "Honey"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hermetisk frukt/dessert: "Fruchtspeisen; Obstsalat, m.fl?"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**27) I hvilken grad likte du følgende drikke fra Tyskland?**

	I hverken					
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke benyttet
Kaffe: "Kaffeextrakt"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Te: "Teextrakt"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frukt- /energidrikke: "Getränkepulver"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**28) Hvis du tenker på varmrettene (lunsj og middag) i de tyske rasjonene; i hvilken grad var du fornøyd med følgende?**

	I hverken					
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist
Tilberedningsmetode	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Størrelse på porsjon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Metthetsfølelse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utseende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lukt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Variasjon på smak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Konsistens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ernæringsmessige kvaliteter?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

Våre allierte nasjoners feltrasjonskonsept er stort sett tuftet på hovedmåltider bestående av mykhermetikk. Denne øvelsen har foregått i et kaldt klima, med temperaturer under null grader. Forskning viser til at varm mat oppleves som best på 63 grader celsius.

**29) I hvilken grad klarte du å varme opp hovedrettene fra Tyskland tilstrekkelig?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

**30) Hvilken rett/retter eller komponent/komponenter i den tyske rasjonen likte du best?**

**31) Hvilken rett/retter eller komponent/komponenter i den tyske rasjonen likte du dårligst?**



**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

**32) Har du spist mat i Slovenia eller spist deres feltrasjoner?**

- Ja  
 Nei

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

**33) I hvilken grad likte du det?**

- I veldig liten grad  
 I nokså liten grad  
 I hverken liten eller stor grad  
 I nokså stor grad  
 I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

**34) Nå som du har benyttet slovenske rasjoner under en øvelse; i hvilken grad mener du at de er bedre egnet en norske feltrasjoner?**

- I veldig liten grad  
 I nokså liten grad  
 I hverken liten eller stor grad  
 I nokså stor grad  
 I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

**35) I hvilken grad mener du følgende aspekter er årsak til det?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
Så mer appetittelig ut	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smakte bedre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spennende innhold	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre variasjon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre tilpasset mitt ernæringsbehov	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Praktisk å tilberede	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre funksjonalitet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mindre avfall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lettere å håndtere avfall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

**36) Her kan du eventuelt kommentere hvorfor du mener de egner seg bedre eller dårligere enn de norske feltrasjonene?**

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

Slovenia og øvrige allierte i NATO har en noe ulik matkultur hva angår for eksempel hva en skal spise (til hva) og når.

**37) I hvilken grad klarte du å tilpasse deg bruken av slovenske feltrasjoner?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

Ved en tenkt NRF operasjon, kan en forvente bruk av denne eller andre lands rasjoner i inntil 4 uker. Du har nå spist denne rasjonen fra Slovenia i ca 10 dager.

**38) Ut fra de ernæringsmessige krav som stilles til slike rasjoner; i hvilken grad opplevde du at Slovenia sine rasjoner tilfredstilte dine behov under denne øvelsen?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**39) I hvilken grad tror du følgende aspekter kan ha bidratt til tilfredsstillende ernæring for deg?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
God smak	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Praktisk å tilberede	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Variert kost	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sunne matvarer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lite tilsetningsstoffer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

Vi vil nå finne ut hvordan smakspreferansene til disse rasjonene eventuelt har endret seg gjennom denne øvelsen.

**40) I siste øvelsen fikk du utdelt slovenske rasjoner. I hvilken grad likte du smaken på disse rasjonene etter henholdsvis første dag, midtveis og siste dag av øvelsen?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
Etter første dag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Midtveis?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Etter siste dag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

**41) I hvilken grad er du alt i alt fornøyd med følgende komponenter fra de slovenske feltrasjonene?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke benyttet
Hele rasjonen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hovedmåltid frokost/lunsj/middag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av pålegg?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av snacks og annet tilbehør?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Utvalget av drikker?



**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

**42) I hvilken grad likte du frokostrettene fra Slovenia?**

	I hverken					
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist
Muesli with raisins, apples and milk?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chocolate Muesli?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Breakfast muesli?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

**43) I hvilken grad likte du lunsj- og middagsrettene fra Slovenia?**

	I hverken					
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist
"Pasta Bolognese"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Pasta Porcini"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Pasta Siciliana with olives"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Chicken Casserole"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Chicken Potato Stew"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Veg. Sausage & Black pepper pasta"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

**44) I hvilken grad likte du dessertene fra Slovenia?**

	I hverken					
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist

"Cream Cheese Strawberry".	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Wild Berry Yogurt Dessert"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Mousse au Chocolate"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

**45) I hvilken grad likte du følgende pålegg, snacks og annet tilbehør fra Slovenia?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist
Brød: "Bread substitute?"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energibar: "Energybar"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sjokolade: "Chocolate"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drops: "Vitamin enriched bonbons"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tyggegummi: "Chewing Gum"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Syltetøy: "Marmelade"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Honning: "Honey"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leverpostei: "Liver pate, Canned meat"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fiskepålegg: "Fish with vegetables, Fish pate with vegetables and mackerel, Thun fish in olive oil, Thun fish pate"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

**46) I hvilken grad likte du følgende drikke fra Slovenia?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke benyttet
Kaffe: "Instant coffee"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Te: "Instant tea"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energidrikke: "Vitamin-mineral drink"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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The following criteria must be fulfilled for this question to be shown:

Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

**47) Hvis du tenker på varmrettene (frokost, lunsj og middag) i de slovenske rasjonene; i hvilken grad var du fornøyd med følgende?**

	I				
	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
Tilberedningsmetode	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Størrelse på porsjon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Metthetsfølelse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utseende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lukt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Variasjon på smak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Konsistens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ernæringsmessige kvaliteter?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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The following criteria must be fulfilled for this question to be shown:

Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

Våre allierte nasjoners feltrasjonskonsept er stort sett tuftet på hovedmåltider bestående av mykhermetikk. Denne øvelsen har foregått i et kaldt klima, med temperaturer under null grader. Forskning viser til at varm mat oppleves som best på 63 grader celsius.

**48) I hvilken grad klarte du å varme opp hovedrettene fra Slovenia tilstrekkelig?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

**49) Hvilken rett/retter eller komponent/komponenter i den slovenske rasjonen likte du best?**

**50) Hvilken rett/retter eller komponent/komponenter i den**



**slovenske rasjonen likte du dårligst?**


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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Frankrike

**51) Har du spist mat i Frankrike eller spist deres feltrasjoner?**

- Ja  
 Nei

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Frankrike

**52) I hvilken grad likte du det?**

- I veldig liten grad  
 I nokså liten grad  
 I hverken liten eller stor grad  
 I nokså stor grad  
 I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Frankrike

**53) Nå som du har benyttet franske rasjoner under en øvelse; i hvilken grad mener du at de er bedre egnet en norske feltrasjoner?**

- I veldig liten grad  
 I nokså liten grad  
 I hverken liten eller stor grad  
 I nokså stor grad  
 I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**54) I hvilken grad mener du følgende aspekter er årsak til det?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
Så mer appetittelig ut	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smakte bedre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spennende innhold	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre variasjon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Bedre tilpasset mitt ernæringsbehov	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Praktisk å tilberede	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre funksjonalitet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mindre avfall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lettere å håndtere avfall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Frankrike

**55) Her kan du eventuelt kommentere hvorfor du mener de egner seg bedre eller dårligere enn de norske feltrasjonene?**

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Frankrike

Frankrike og øvrige allierte i NATO har en noe ulik matkultur hva angår for eksempel hva en skal spise (til hva) og når.

**56) I hvilken grad klarte du å tilpasse deg bruken av franske feltrasjoner?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Frankrike

Ved en tenkt NRF operasjon, kan en forvente bruk av denne eller andre lands rasjoner i inntil 4 uker. Du har nå spist denne rasjonen fra Frankrike i ca 10 dager.

**57) Ut fra de ernæringsmessige krav som stilles til slike rasjoner; i hvilken grad opplevde du at Frankrike sine rasjoner tilfredstilte dine behov under denne øvelsen?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**58) I hvilken grad tror du følgende aspekter kan ha bidratt til tilfredsstillende ernæring for deg?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
God smak	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Praktisk å tilberede	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Variert kost	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sunne matvarer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lite tilsetningsstoffer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Frankrike

Vi vil nå finne ut hvordan smakspreferansene til disse rasjonene eventuelt har endret seg gjennom denne øvelsen.

**59) I siste øvelsen fikk du utdelt franske rasjoner. I hvilken grad likte du smaken på disse rasjonene etter henholdsvis første dag, midtveis og siste dag av øvelsen?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
Etter første dag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Midtveis?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Etter siste dag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Frankrike

**60) I hvilken grad er du alt i alt fornøyd med følgende komponenter fra de franske feltrasjonene?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke benyttet
Hele rasjonen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hovedmåltid frokost/lunsj/middag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Utvalget av hermetisk pålegg?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av annet pålegg, snacks og annet tilbehør?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av drikker?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Frankrike

**61) I hvilken grad likte du lunsj- og middagsrettene fra Frankrike?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist
Indian rice stew with minced poultry steaks?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ravioli in mushroom Sauce?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goulash with potatoes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hamburger with tomato sauce?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rice stew with minced meat rolls?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
South American vegetable chilli?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Frankrike

Frankrike har ikke egne frokostretter, slik du er vant med fra våre og kanskje andre lands feltrasjoner. I det følgende spørsmålet vil derfor alle komponenter som tyskerne benytter som frokost, kvelds, snack/mellommåltid og drikke omhandlet her.

**62) I hvilken grad likte du følgende pålegg, snacks og annet tilbehør fra Frankrike?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist
Mellommåltid (flere typer 150 grams): "Zwischenmahlzeit"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brød: "Roggenschrotbrot"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Syltetøy: "Konfitüre"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kjeks: "Hartkaks"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sjokolade: "Schokolade"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Snack: "Caramel Candy, Mint Chocolate Chip Candy"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Tyggegummi: "Kaugummi"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Honning: "Honey"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hermetisk frukt: "Fruchtspeisen; Semolina dish with fruit, fruit salad"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Frankrike

**63) I hvilken grad likte du følgende drikke fra Frankrike?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke benyttet
Kaffe: "Kaffeextrakt"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Te: "Teextrakt"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frukt- /energidrikke: "Getränkepulver"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Frankrike

**64) Hvis du tenker på varmrettene (lunsj og middag) i de franske rasjonene; i hvilken grad var du fornøyd med følgende?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
Tilberedningsmetode	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Størrelse på porsjon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Metthetsfølelse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utseende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lukt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Variasjon på smak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Konsistens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ernæringsmessige kvaliteter?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Frankrike

Våre allierte nasjoners feltrasjonskonsept er stort sett tuftet på hovedmåltider bestående av mykhermetikk. Denne øvelsen har foregått i et kaldt klima, med temperaturer under null grader. Forskning viser til at varm mat oppleves som best på 63 grader celsius.

**65) I hvilken grad klarte du å varme opp hovedrettene fra Frankrike tilstrekkelig?**

- I veldig liten grad  
 I nokså liten grad  
 I hverken liten eller stor grad  
 I nokså stor grad  
 I veldig stor grad

**66) Hvilken rett/retter eller komponent/komponenter i den franske rasjonen likte du best?**

**67) Hvilken rett/retter eller komponent/komponenter i den franske rasjonen likte du dårligst?**

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - England

**68) Har du spist mat i England eller spist deres feltrasjoner?**

- Ja  
 Nei

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - England

**69) I hvilken grad likte du det?**

- I veldig liten grad  
 I nokså liten grad  
 I hverken liten eller stor grad  
 I nokså stor grad  
 I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - England

**70) Nå som du har benyttet engelske rasjoner under en øvelse; i**

**hvilken grad mener du at de er bedre egnet en norske feltrasjoner?**

- I veldig liten grad  
 I nokså liten grad  
 I hverken liten eller stor grad  
 I nokså stor grad  
 I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**71) I hvilken grad mener du følgende aspekter er årsak til det?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
Så mer appetittelig ut	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smakte bedre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spennende innhold	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre variasjon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre tilpasset mitt ernæringsbehov	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Praktisk å tilberede	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre funksjonalitet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mindre avfall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lettere å håndtere avfall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - England

**72) Her kan du eventuelt kommentere hvorfor du mener de egner seg bedre eller dårligere enn de norske feltrasjonene?**

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - England

England og øvrige allierte i NATO har en noe ulik matkultur hva angår for eksempel hva en skal spise (til hva) og når.

**73) I hvilken grad klarte du å tilpasse deg bruken av engelske feltrasjoner?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - England

Ved en tenkt NRF operasjon, kan en forvente bruk av denne eller andre lands rasjoner i inntil 4 uker. Du har nå spist denne rasjonen fra England i ca 10 dager.

**74) Ut fra de ernæringsmessige krav som stilles til slike rasjoner; i hvilken grad opplevde du at England sine rasjoner tilfredstilte dine behov under denne øvelsen?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**75) I hvilken grad tror du følgende aspekter kan ha bidratt til tilfredsstillende ernæring for deg?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
God smak	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Praktisk å tilberede	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Variert kost	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sunne matvarer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lite tilsetningsstoffer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - England

Vi vil nå finne ut hvordan smakspreferansene til disse rasjonene eventuelt har endret seg gjennom denne øvelsen.

**76) I siste øvelsen fikk du utdelt engelske rasjoner. I hvilken grad likte du smaken på disse rasjonene etter henholdsvis første dag, midtveis og siste dag av øvelsen?**

	I veldig	I nokså	I hverken liten eller	I nokså	I veldig
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



	liten grad	liten grad	stor grad	stor grad	stor grad
Etter første dag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Midtveis?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Etter siste dag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - England

**77) I hvilken grad er du alt i alt fornøyd med følgende komponenter fra de engelske feltrasjonene?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke benyttet
Hele rasjonen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hovedmåltid frokost/lunsj/middag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av hermetisk pålegg?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av annet pålegg, snacks og annet tilbehør?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av drikker?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - England

**78) I hvilken grad likte du lunsj- og middagsrettene fra England?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist
Indian rice stew with minced poultry steaks?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ravioli in mushroom Sauce?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goulash with potatoes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hamburger with tomato sauce?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rice stew with minced meat rolls?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
South American vegetable chilli?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**

The following criteria must be fulfilled for this question to be shown:

Fra hvilket land fikk du utdelt feltrasjoner? - England

England har ikke egne frokostretter, slik du er vant med fra våre og kanskje andre lands feltrasjoner. I det følgende spørsmålet vil derfor alle komponenter som tyskerne benytter som frokost, kvelds, snack/mellommåltid og drikke omhandlet her.

**79) I hvilken grad likte du følgende pålegg, snacks og annet tilbehør fra England?**

	I hverken					
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist
Mellommåltid (flere typer 150 grams): "Zwischenmahlzeit"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brød: "Roggenschrotbrot"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Syltetøy: "Konfitüre"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kjeks: "Hartkaks"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sjokolade: "Schokolade"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Snack: "Caramel Candy, Mint Chocolate Chip Candy"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tyggegummi: "Kaugummi"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Honning: "Honey"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hermetisk frukt: "Fruchtspeisen; Semolina dish with fruit, fruit salad"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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The following criteria must be fulfilled for this question to be shown:

Fra hvilket land fikk du utdelt feltrasjoner? - England

**80) I hvilken grad likte du følgende drikke fra England?**

	I hverken					
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke benyttet
Kaffe: "Kaffeextrakt"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Te: "Teextrakt"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frukt-/energidrikke: "Getränkepulver"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

This box is shown in preview only..

The following criteria must be fulfilled for this question to be shown:

Fra hvilket land fikk du utdelt feltrasjoner? - England

**81) Hvis du tenker på varmrettene (lunsj og middag) i de engelske rasjonene; i hvilken grad var du fornøyd med følgende?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
Tilberedningsmetode	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Størrelse på porsjon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Metthetsfølelse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utseende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lukt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Variasjon på smak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Konsistens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ernæringsmessige kvaliteter?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - England

Våre allierte nasjoners feltrasjonskonsept er stort sett tuftet på hovedmåltider bestående av mykhermetikk. Denne øvelsen har foregått i et kaldt klima, med temperaturer under null grader. Forskning viser til at varm mat oppleves som best på 63 grader celsius.

**82) I hvilken grad klarte du å varme opp hovedrettene fra England tilstrekkelig?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

**83) Hvilken rett/retter eller komponent/komponenter i den engelske rasjonen likte du best?**

**84) Hvilken rett/retter eller komponent/komponenter i den engelske rasjonen likte du dårligst?**



This box is shown in preview only..  
The following criteria must be fulfilled for this question to be shown:  
Fra hvilket land fikk du utdelt feltrasjoner? - USA

**85) Har du spist mat i USA eller spist deres feltrasjoner?**

- Ja  
 Nei

This box is shown in preview only..  
The following criteria must be fulfilled for this question to be shown:  
Fra hvilket land fikk du utdelt feltrasjoner? - USA

**86) I hvilken grad likte du det?**

- I veldig liten grad  
 I nokså liten grad  
 I hverken liten eller stor grad  
 I nokså stor grad  
 I veldig stor grad

This box is shown in preview only..  
The following criteria must be fulfilled for this question to be shown:  
Fra hvilket land fikk du utdelt feltrasjoner? - USA

**87) Nå som du har benyttet amerikanske rasjoner under en øvelse; i hvilken grad mener du at de er bedre egnet en norske feltrasjoner?**

- I veldig liten grad  
 I nokså liten grad  
 I hverken liten eller stor grad  
 I nokså stor grad  
 I veldig stor grad

This box is shown in preview only..  
The following criteria must be fulfilled for this question to be shown:  
Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**88) I hvilken grad mener du følgende aspekter er årsak til det?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
Så mer appetittelig ut	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smakte bedre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spennende innhold	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre variasjon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre tilpasset mitt ernæringsbehov	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Praktisk å tilberede	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre funksjonalitet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Mindre avfall

Lettere å håndtere avfall

This box is shown in preview only..  
The following criteria must be fulfilled for this question to be shown:  
Fra hvilket land fikk du utdelt feltrasjoner? - USA

**89) Her kan du eventuelt kommentere hvorfor du mener de egner seg bedre eller dårligere enn de norske feltrasjonene?**

This box is shown in preview only..  
The following criteria must be fulfilled for this question to be shown:  
Fra hvilket land fikk du utdelt feltrasjoner? - USA

USA og øvrige allierte i NATO har en noe ulik matkultur hva angår for eksempel hva en skal spise (til hva) og når.

**90) I hvilken grad klarte du å tilpasse deg bruken av amerikanske feltrasjoner?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

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The following criteria must be fulfilled for this question to be shown:  
Fra hvilket land fikk du utdelt feltrasjoner? - USA

Ved en tenkt NRF operasjon, kan en forvente bruk av denne eller andre lands rasjoner i inntil 4 uker. Du har nå spist denne rasjonen fra USA i ca 10 dager.

**91) Ut fra de ernæringsmessige krav som stilles til slike rasjoner; i hvilken grad opplevde du at USA sine rasjoner tilfredstilte dine behov under denne øvelsen?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

This box is shown in preview only..  
The following criteria must be fulfilled for this question to be shown:  
Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**92) I hvilken grad tror du følgende aspekter kan ha bidratt til tilfredsstillende ernæring for deg?**

I  
hverken  
liten I I

	veldig liten grad	nokså liten grad	eller stor grad	nokså stor grad	veldig stor grad
God smak	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Praktisk å tilberede	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Variert kost	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sunne matvarer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lite tilsetningsstoffer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - USA

Vi vil nå finne ut hvordan smakspreferansene til disse rasjonene eventuelt har endret seg gjennom denne øvelsen.

**93) I siste øvelsen fikk du utdelt amerikanske rasjoner. I hvilken grad likte du smaken på disse rasjonene etter henholdsvis første dag, midtveis og siste dag av øvelsen?**

	I hverken				
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad
Etter første dag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Midtveis?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Etter siste dag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - USA

**94) I hvilken grad er du alt i alt fornøyd med følgende komponenter fra de amerikanske feltrasjonene?**

	I hverken					Ikke benyttet
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad	
Hele rasjonen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hovedmåltid frokost/lunsj/middag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av pålegg?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av snacks og annet tilbehør?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av drikker?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - USA

**95) I hvilken grad likte du lunsj- og middagsrettene fra USA?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist
Chilli with beans, Mexican corn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Boneless porc rib	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beef raviolo in meat sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maple sausage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chicken with tomato & feta cornbread stuffing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chicken with noodles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beef briscet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meatballs with marinara	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beef stew, garlic mashed potatoes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chilli & macaroni	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vegetable lasagne	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Veggie burger in BBQ sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cheese tortellini	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Penne with vegetarian sausage in spicy tomato sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Southwest beef & black beans, Mexican rice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chicken fajita, Re-fried beans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sloppy Joe filling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grilled beef patty, mexican macaroni & cheese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pot roast w/vegetables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spaghetti with meat sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tuna in pouch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chicken with dumplings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chicken pesto & pasta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Buffalo chicken, fried rice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**

The following criteria must be fulfilled for this question to be shown:

Fra hvilket land fikk du utdelt feltrasjoner? - USA

USA har ikke egne frokostretter, slik du er vant med fra våre og kanskje andre lands feltrasjoner. I det følgende spørsmålet vil derfor alle komponenter som tyskerne benytter som frokost, kvelds, snack/mellommåltid og drikke omhandlet her.

**96) I hvilken grad likte du følgende pålegg, snacks og annet tilbehør fra USA?**

	I hverken					
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist
Mellommåltid (flere typer 150 grams): "Zwischenmahlzeit"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brød: "Roggenschrotbrot"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Syltetøy: "Konfitüre"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kjeks: "Hartkaks"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sjokolade: "Schokolade"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Snack: "Caramel Candy, Mint Chocolate Chip Candy"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tyggegummi: "Kaugummi"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Honning: "Honey"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hermetisk frukt: "Fruchtspeisen; Semolina dish with fruit, fruit salad"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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The following criteria must be fulfilled for this question to be shown:

Fra hvilket land fikk du utdelt feltrasjoner? - USA

**97) I hvilken grad likte du følgende drikke fra USA?**

	I hverken					
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke benyttet
Kaffe: "Kaffeextrakt"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Te: "Teextrakt"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frukt-/energidrikke: "Getränkepulver"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

This box is shown in preview only..

The following criteria must be fulfilled for this question to be shown:

Fra hvilket land fikk du utdelt feltrasjoner? - USA

**98) Hvis du tenker på varmrettene (lunsj og middag) i de amerikanske rasjonene; i hvilken grad var du fornøyd med følgende?**



	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
Tilberedningsmetode	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Størrelse på porsjon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Metthetsfølelse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utseende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lukt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Variasjon på smak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Konsistens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ernæringsmessige kvaliteter?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - USA

Våre allierte nasjoners feltrasjonskonsept er stort sett tuftet på hovedmåltider bestående av mykhermetikk. Denne øvelsen har foregått i et kaldt klima, med temperaturer under null grader. Forskning viser til at varm mat oppleves som best på 63 grader celsius.

**99) I hvilken grad klarte du å varme opp hovedrettene fra USA tilstrekkelig?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

**100) Hvilken rett/retter eller komponent/komponenter i den amerikanske rasjonen likte du best?**

**101) Hvilken rett/retter eller komponent/komponenter i den amerikanske rasjonen likte du dårligst?**



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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Canada

**102) Har du spist mat i Canada eller spist deres feltrasjoner?**

- Ja  
 Nei

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Canada

**103) I hvilken grad likte du det?**

- I veldig liten grad  
 I nokså liten grad  
 I hverken liten eller stor grad  
 I nokså stor grad  
 I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Canada

**104) Nå som du har benyttet canadiske rasjoner under en øvelse; i hvilken grad mener du at de er bedre egnet en norske feltrasjoner?**

- I veldig liten grad  
 I nokså liten grad  
 I hverken liten eller stor grad  
 I nokså stor grad  
 I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**105) I hvilken grad mener du følgende aspekter er årsak til det?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
Så mer appetittelig ut	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smakte bedre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spennende innhold	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre variasjon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre tilpasset mitt ernæringsbehov	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Praktisk å tilberede	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bedre funksjonalitet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Mindre avfall

Lettere å håndtere avfall

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Canada

**106) Her kan du eventuelt kommentere hvorfor du mener de egner seg bedre eller dårligere enn de norske feltrasjonene?**

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Canada

Canada og øvrige allierte i NATO har en noe ulik matkultur hva angår for eksempel hva en skal spise (til hva) og når.

**107) I hvilken grad klarte du å tilpasse deg bruken av canadiske feltrasjoner?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Canada

Ved en tenkt NRF operasjon, kan en forvente bruk av denne eller andre lands rasjoner i inntil 4 uker. Du har nå spist denne rasjonen fra Canada i ca 10 dager.

**108) Ut fra de ernæringsmessige krav som stilles til slike rasjoner; i hvilken grad opplevde du at Canada sine rasjoner tilfredstilte dine behov under denne øvelsen?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**109) I hvilken grad tror du følgende aspekter kan ha bidratt til tilfredsstillende ernæring for deg?**

I  
hverken

	I veldig liten grad	I nokså liten grad	liten eller stor grad	I nokså stor grad	I veldig stor grad
God smak	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Praktisk å tilberede	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Variert kost	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sunne matvarer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lite tilsetningsstoffer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Canada

Vi vil nå finne ut hvordan smakspreferansene til disse rasjonene eventuelt har endret seg gjennom denne øvelsen.

**110) I siste øvelsen fikk du utdelt canadiske rasjoner. I hvilken grad likte du smaken på disse rasjonene etter henholdsvis første dag, midtveis og siste dag av øvelsen?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
Etter første dag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Midtveis?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Etter siste dag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Canada

**111) I hvilken grad er du alt i alt fornøyd med følgende komponenter fra de canadiske feltrasjonene?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke benyttet
Hele rasjonen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hovedmåltid frokost/lunsj/middag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av pålegg?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av snacks og annet tilbehør?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av drikker?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Slovenia

**112) I hvilken grad likte du frokostrettene fra Canada?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist
Banana Flavoured Oatmeal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maple & Brown Sugar Oatmeal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wild Berry Crunchie Cereals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baked Apple Flavoured Oatmeal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baked beans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Breakfast Sausage Links	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beans and Wieners in Tomato sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scalloped Potatoes and Ham	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Omelette with Salsa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sausage and Hash browns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sliced Apple with Syrup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fruit Cocktail with Syrup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sliced Pears with Syrup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cherries with Syrup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strawberry Apple Sauce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sliced Peach with Syrup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Canada

**113) I hvilken grad likte du lunsj- og middagsrettene fra Canada?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist
Pork with Herbs and Wine Cream Sauce?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beef and Vegetable Stew?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Macaroni with Cheese sauce?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chicken Fajitas & Corn Mexican Style?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beef Ravioli with Tomato Sauce?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tarragon Chicken?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sliced Peaches with Syrup?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apple Sauce?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fruit Cocktail with Syrup?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pineapple Tidbits with Syrup?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mango Peach Apple Sauce?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Chicken Tournedos with Pepper Sauce"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Beef Macaroni with Meat Sauce"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Salmon Filet Nature"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Indian Chicken Breast"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Beef Pot Roast with Mushroom Sauce"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Cheese Tortellini with Alfredo Sauce"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Chocolate Chip Square"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Fruit Cocktail with Syrup"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Sliced Apples with Syrup"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Cherry Blueberry Dessert"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Blueberries with Syrup"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Sliced Pears with Syrup"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Canada

Canada har ikke egne frokostretter, slik du er vant med fra våre og kanskje andre lands feltrasjoner. I det følgende spørsmålet vil derfor alle komponenter som tyskerne benytter som frokost, kvelds, snack/mellommåltid og drikke omhandlet her.

**114) I hvilken grad likte du følgende pålegg, snacks og annet tilbehør fra Canada?**

			I		
			hverken		
I	I	I	I	I	
veldig	nokså	liten	nokså	veldig	
liten	liten	eller	stor	stor	Ikke
grad	grad	stor	grad	grad	spist
		grad			

Syltetøy: "Strawberry Jam/Apple Jelly, Raspberry Jam, Orange

Marmelade"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peanøttsmør: "Peanut Butter"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Honning: "Honey"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supper: "Cream of Mushroom, Beef and Vegetable Noodle, Spring Vegetable"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Diverse sauser: "Mango Chutney, Pepper Sauce, Steak Sauce, Teriyaki Sauce or Cranberry Jelly, Jalapeno Sauce, Soya Sauce and Ketchup"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Diverse vegetabilsk "instant" tilbehør: "Instant Sour Cream and Chives Mashed Potatoes/ Instant Vegetable Couscous/ Instant Buttered Rice/ Instant Plain Mashed Potatoes, "?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brød: "Bread, Tortilla"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kjeks: Oatmeal Raisins Cookies, Fig Newton Cookies, Fruit Exploation Muffin Bar, Butter Shortbread Cookies, Carrot & Orange Zest Muffin Bar, Cheese Sandwich Crackers, Chocolate Chip Cookies, and Molasses Bear Paws"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sjokolade/snack: "Malted Chocolate Bar, Dairy Milk Chocolate Bar, Kit Cat Chocolate Bar, Coffee Crips Chocolate Bar, Aero Chunky Chocolate Bar, Creamy Caramel Chocolate Bar, "?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drops: "Caramel Candy, Mint Chocolate Chip Candy"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tyggegummi: "Chewing Gum"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Canada

**115) I hvilken grad likte du følgende drikke fra Canada?**

	I hverken					
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke benyttet
Kaffe: "Coffee, and Cappuccino Coffee	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Te: "Mint Herbal Tea, Orange Pekoe Tea, Hot Apple Beverage Crystals, "?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Varm sjokolade/kakao: "Hot Chocolate Mix or Hazelnut Hot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Chocolate Mix

Energidrikke: "Raspberry Sports  
 Drink Crystals, Grape Sports  
 Drink Crystals, Orange Sports  
 Drink Crystals, Lime Sports  
 Drink Crystals, Ice Sports Drink  
 Crystals, Peach Sports Drink  
 Crystals"?

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Canada

**116) Hvis du tenker på varmrettene (lunsj og middag) i de canadiske rasjonene; i hvilken grad var du fornøyd med følgende?**

	I				
	I	I	I	I	I
	veldig	nokså	hverken	nokså	veldig
	liten	liten	liten	stor	stor
	grad	grad	grad	grad	grad
Tilberedningsmetode	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Størrelse på porsjon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Metthetsfølelse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utseende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lukt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Variasjon på smak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Konsistens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ernæringsmessige kvaliteter?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Canada

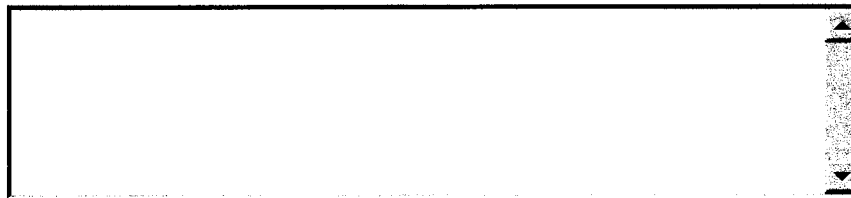
Våre allierte nasjoners feltrasjonskonsept er stort sett tuftet på hovedmåltider bestående av mykhermetikk. Denne øvelsen har foregått i et kaldt klima, med temperaturer under null grader. Forskning viser til at varm mat oppleves som best på 63 grader celsius.

**117) I hvilken grad klarte du å varme opp hovedrettene fra Canada tilstrekkelig?**

- I veldig liten grad  
 I nokså liten grad  
 I hverken liten eller stor grad  
 I nokså stor grad  
 I veldig stor grad

**118) Hvilken rett/retter eller komponent/komponenter i den canadiske rasjonen likte du best?**





**119) Hvilken rett/retter eller komponent/komponenter i den canadiske rasjonen likte du dårligst?**

---



**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Norge

Tyskland og øvrige allierte i NATO har en noe ulik matkultur hva angår for eksempel hva en skal spise (til hva) og når.

**120) I hvilken grad klarte du å tilpasse deg bruken av norske feltrasjoner?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Norge

Ved en tenkt NRF operasjon, kan en forvente bruk av denne eller andre lands rasjoner i inntil 4 uker. Du har nå spist denne rasjonen fra Tyskland i ca 10 dager.

**121) Ut fra de ernæringsmessige krav som stilles til slike rasjoner; i hvilken grad opplevde du at Norge sine rasjoner tilfredstilte dine behov under denne øvelsen?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Tyskland

**122) I hvilken grad tror du følgende aspekter kan ha bidratt til tilfredsstillende ernæring for deg?**

		I		
		hverken		
I	I	liten	I	I
veldig	nokså	eller	nokså	veldig
liten	liten	stor	stor	stor
grad	grad	grad	grad	grad

God smak	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Praktisk å tilberede	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Variert kost	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sunne matvarer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lite tilsetningsstoffer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Norge

Du har nå innatt disse rasjonene i mange dager. Vi vil nå finne ut hvordan smakspreferansene til disse rasjonene eventuelt har endret seg gjennom denne øvelsen.

**123) I siste øvelsen fikk du utdelt norske rasjoner. I hvilken grad likte du smaken på disse rasjonene etter henholdsvis første dag, midtveis og siste dag av øvelsen?**

	I hverken				
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad
Etter første dag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Midtveis?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Etter siste dag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Norge

**124) I hvilken grad er du alt i alt fornøyd med følgende komponenter fra de norske feltrasjonene?**

	I hverken					
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke benyttet
Hele rasjonen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hovedmåltid frokost/lunsj/middag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av pålegg?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av snacks og annet tilbehør?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utvalget av drikker?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**

Fra hvilket land fikk du utdelt feltrasjoner? - Norge

**125) I hvilken grad likte du lunsj- og middagsrettene fra Norge?**

	I hverken					
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist
Lam Mulligitawny	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lapskaus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Storfegryte	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Steinbitgryte	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Torskegryte	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kylling i karry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pasta bolognaisse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Norge

Tyskland har ikke egne frokostretter, slik du er vant med fra våre og kanskje andre lands feltrasjoner. I det følgende spørsmålet vil derfor alle komponenter som tyskerne benytter som frokost, kvelds, snack/mellommåltid og drikke omhandlet her.

**126) I hvilken grad likte du følgende pålegg, snacks og annet tilbehør fra Norge?**

	I hverken					
	I veldig liten grad	I nokså liten grad	I liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke spist
Syltetøy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tunfisk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Makrell	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sjokolade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energibar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drops	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Norge

**127) I hvilken grad likte du følgende drikke fra Norge?**

I

	I veldig liten grad	I nokså liten grad	hverken liten eller stor grad	I nokså stor grad	I veldig stor grad	Ikke benyttet
Kaffe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Solbærtoddy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
kakao	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energidrikk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Norge

**128) Hvis du tenker på varmrettene (lunsj og middag) i de norske rasjonene; i hvilken grad var du fornøyd med følgende?**

	I veldig liten grad	I nokså liten grad	I hverken liten eller stor grad	I nokså stor grad	I veldig stor grad
Tilberedningsmetode	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Størrelse på porsjon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Metthetsfølelse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utseende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lukt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Variasjon på smak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Konsistens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ernæringsmessige kvaliteter?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**This box is shown in preview only..**  
**The following criteria must be fulfilled for this question to be shown:**  
 Fra hvilket land fikk du utdelt feltrasjoner? - Norge

Våre allierte nasjoners feltrasjonskonsept er stort sett tuftet på hovedmåltider bestående av mykhermetikk. Denne øvelsen har foregått i et kaldt klima, med temperaturer under null grader. Forskning viser til at varm mat oppleves som best på 63 grader celsius.

**129) I hvilken grad klarte du å varme opp hovedrettene fra Norge tilstrekkelig?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

---

**130) Hvilken rett/retter eller komponent/komponenter i den norske rasjonen likte du best?**

**131) Hvilken rett/retter eller komponent/komponenter i den norske rasjonen likte du dårligst?**



---

**132) I hvilken grad påvirket befalet deg til å drikke tilstrekkelig?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad

---

**133) I hvilken grad påvirket befalet deg til å spise tilstrekkelig?**

- I veldig liten grad
- I nokså liten grad
- I hverken liten eller stor grad
- I nokså stor grad
- I veldig stor grad



---

Til slutt ønsker vi å få noen data om deg.

**134) Kjønn**

- Mann  Kvinne

---

**135) Grad**

- Vernepliktig
- Vervet
- Sersjant
- Fenrik

- Løytnant
  - Kaptein
  - Major
  - Oberstløytnant
  - Annet
- 

**136) Alder**

---

**137) Høyde i cm (f.eks. 179)**

---

**138) Vekt i kg (f.eks. 79)**

---

**139) Røyker du?**

- Nei
  - Ja
- 

**140) Utover det som tjenesten krever; hvor mye trener du?**

- En til to ganger i uken i uken
  - Tre til fire ganger i uken
  - Mer enn fire ganger i uken
  - Ikke noe utover normal tjeneste
- 

**141) Hvor kommer du fra?**

- Stor by (Oslo, Bergen, Trondheim, Stavanger, Drammen, Kristiansand - ned til 80.000 innbyggere)
  - Middels stor by (Skien, Sarpsborg, Hamar, Bodø, Ålesund- ned til 60.000 innbyggere)
  - Liten by (Røros, Harstad, Tynset, Elverum, Verdal - må ha bystatus)
  - Bygd (ikke bystatus)
- 

**142) Hvor er du og dine foreldre født?**

Resten  
av

Sør-

Nord-

	Norge	Europa	Asia	Afrika	Amerika	Amerika/Australia
Du	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Din mor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Din far	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

**143) Hvor mange hele år har du vært i Forsvaret (f.eks. 4)?**

---

**144) Hva slags funksjon fyller du i avdelingen? Kryss av det alternativet som passer best.**

- Infanteri
- Oppklaring
- Vognfører
- Skytter
- Samband
- Stab eller ledelse
- Annet

---

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**ANNEX 3: ELECTRONICALLY QUESTIONNAIRE TRANSLATED INTO ENGLISH**

1. To what extent do you consider yourself as someone who is curious and constantly try to taste the new food?

- Very little*
- Little*
- Neither or*
- Much*
- Very much*

2. If you eat food at restaurants abroad, the extent to which select the following?

Very little Fairly little or no Fairly large extent very much

Local dishes  
International dishes  
Fish  
Steak  
Chicken  
Salad  
Soft drinks to food  
Beer with food  
Wine with food

3. To what extent do you even understand your interest in diet and nutrition?

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

4. During an exercise, as you've been through now, to what extent do you think it's important for you to take full field ration?

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

Research from allied nations indicates that between 20-40% of the energy in a field ration thrown during exercise. The consequence of not to absorb adequate nutrition, can be serious.

5. In hindsight spirit, and if you knew the consequences of not eating enough (and correct) during exercise, to what extent this would affect your food intake for this exercise?

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

6. Have you taken any food / drink than distributed rations during this exercise?

Never Once 2-3 times daily Almost Daily

Mineral water

Chocolate / Snacks

Snack

Food from store

Food from home

Other

7. Do you have experience from other countries' field rations?

Yes

No

8. How many allied countries' field rations, you have experience / tasted before?

9. To what extent would you say that these are more or less suitable as field rations for Norwegian soldiers?

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

10. To what extent do you agree with the following statements about other nations' field rations?

Very little Fairly little or no Fairly large extent very much

Passes amount of food

Meals were too small

They looked more appetizing than the

They tasted better

Good information on ration content

Packaging appealed to me

Better adapted to my nutritional needs

More practical to prepare

Different from nation to nation

11. From what you've read or heard about the allied countries' field rations, to what extent do you think these are suitable for Norwegian soldiers?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

12. From what country did you get field rations?

Slovenia

Germany

England

France

USA

Canada

Norway

13. Have you eaten food in Germany or eaten their field rations?

Yes

No

14. To what extent did you like it?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

15. Now that you have used them during an exercise, to what extent do you think they are better suited a Norwegian field rations?

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

16. To what extent do you think the following aspects are the cause of the Very little Fairly little or no Fairly large extent very much

So more appetite of the

Tasted better

Exciting Content

Improved variety

Better adapted to my nutritional needs

Practical cooking

Better functionality

Less waste

Easier to manage waste

17. Here you may want to comment on why you think they suited better or worse than the Norwegian field rations?

18. To what extent did you adapt to the use of German rations?

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

If a plan NRF operation can be expected using this or other countries rations for up to 4 weeks. You have now eaten this ration from Germany in about 10 days.

19. Based on the nutritional requirements of such rations, to what extent did you experience that Germany's rations satisfy your needs during this exercise?

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

20. To what extent do you think the following aspects may have contributed to adequate nutrition for you?

Very little Fairly little or no Fairly large extent very much

Good taste

Practical cooking

Varied diet

Healthy foods

Low additive

You have now taken these rations for about 10 days. We will now determine how the taste preferences of these rations may have changed through this exercise.

21. In the last exercise you got dealt the German rations. To what extent did you like the taste of these rations, respectively, after the first day, midway and final day of the event?

Very little Fairly little or no Fairly large extent very much

First day

Mid periode

Last Day

22. To what extent are you altogether pleased with components from the German rations?

Very little Fairly little or no Fairly large extent very much

All

Dinner / lunch

Orders

Snacks / Accessories

Drink

23. To what extent did you lunch - and dinner dishes from Germany?

Very little Fairly little or no Fairly large extent very much

div dishes

24. To what extent did the following order, snacks and other supplies from Germany?

Very little Fairly little or no Fairly large extent very much

see Tables 21-27

25. To what extent did the following drink from Germany?

Very little Fairly little or no Fairly large extent very much

see Tables 21-27

26. If you think of hot dishes in the German rations, to what extent were you satisfied with the following?

Very little Fairly little or no Fairly large extent very much

Preparation Method

Size of portion

Satiety

Appearance

Odour

Taste

Variation in taste

Consistency

Nutritional qualities

27. To what extent did you do to warm up the main dishes from Germany sufficient?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

28. Which main course / correct or component / components did you like best?

29. Which main course / correct or component / components did you poorly?

30. Have you eaten food in Slovenia or eaten their field rations?

Yes

No

31. To what extent did you like it?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

32. Now that you have used them during an exercise, to what extent do you think they are better suited a Norwegian field rations?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

33. To what extent do you think the following aspects are the cause of the  
Very little Fairly little or no Fairly large extent very much

So more appetite of the  
Tasted better  
Exciting Content  
Improved variety  
Better adapted to my nutritional needs  
Practical cooking  
Better functionality  
Less waste  
Easier to manage waste

34. Here you may want to comment on why you think they suited better or worse than the Norwegian field rations?

35. To what extent did you adapt to the use of Slovenian rations?

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

If a plan NRF operation can be expected using this or other countries rations for up to 4 weeks. You have now eaten this ration from Slovenia for about 10 days.

36. Based on the nutritional requirements of such rations, the extent to which perceived that Slovenia's rations satisfy your needs during this exercise?

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

37. To what extent do you think the following aspects may have contributed to adequate nutrition for you?

Very little Fairly little or no Fairly large extent very much

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

You have now taken these rations for 10 days. We will now determine how the taste preferences of these rations may have changed through this exercise.

38. In the last exercise did you dealt Slovenian rations. To what extent did you like the taste of these rations, respectively, after the first day, midway and final day of the event?

Very little Fairly little or no Fairly large extent very much

First day  
Mid periode  
Last Day

39. To what extent are you altogether pleased with the components of the Slovenian rations?

Very little Fairly little or no Fairly large extent very much

All  
Dinner / lunch  
Orders  
Snacks / Accessories  
Drink

40. To what extent did you like the breakfast dishes from Slovenia?

Very little Fairly little or no Fairly large extent very much  
see Tables 21-27

41. To what extent did you lunch - and dinner dishes from Slovenia?

Very little Fairly little or no Fairly large extent very much  
see Tables 21-27

42. To what extent did you like desserts from Slovenia?

Very little Fairly little or no Fairly large extent very much  
see Tables 21-27

43. To what extent did the following order, snacks and other supplies from Slovenia?

Very little Fairly little or no Fairly large extent very much  
see Tables 21-27

44. To what extent did the following drinks from Slovenia?

Very little Fairly little or no Fairly large extent very much  
see Tables 21-27



45. If you think of hot dishes in the Slovenian rations, to what extent were you satisfied with the following?

Very little Fairly little or no Fairly large extent very much

Preparation Method

Size of portion

Satiety

Appearance

Odour

Taste

Variation in taste

Consistency

Nutritional qualities

46. To what extent did you do to warm up the main dishes from Slovenia enough?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

47. Which main course / correct or component / components did you like best?

48. Which main course / correct or component / components did you poorly?

49. Have you eaten food in France or eaten their field rations?

Yes

No

50. To what extent did you like it?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

51. Now that you have used them during an exercise, to what extent do you think they are better suited a Norwegian field rations?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

52. To what extent do you think the following aspects are the cause of the  
Very little Fairly little or no Fairly large extent very much

So more appetite of the

Tasted better

Exciting Content

Improved variety

Better adapted to my nutritional needs

Practical cooking

Better functionality

Less waste

Easier to manage waste

53. Here you may want to comment on why you think they suited better or worse than the Norwegian field rations?

54. To what extent did you adapt to the use of French rations?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

If a plan NRF operation can be expected using this or other countries rations for up to 4 weeks. You have now eaten this ration from Slovenia for about 10 days.

55. Based on the nutritional requirements of such rations, the extent to which perceived that Slovenia's rations satisfy your needs during this exercise?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

56. To what extent do you think the following aspects may have contributed to adequate nutrition for you?

Very little Fairly little or no Fairly large extent very much

Good taste

Practical cooking

Varied diet

Healthy foods

Low additive

You have now taken these rations for about 10 days. We will now determine how the taste preferences of these rations may have changed through this exercise.

57. In the last exercise you got dealt the French rations. To what extent did you like the taste of these rations, respectively, after the first day, midway and final day of the event?  
Very little Fairly little or no Fairly large extent very much

First day  
Mid periode  
Last Day

58. To what extent are you altogether pleased with the following components from the French rations?  
Very little Fairly little or no Fairly large extent very much

All  
Dinner / lunch  
Orders  
Snacks / Accessories  
Drink

59. To what extent did you lunch - and dinner dishes from France?  
Very little Fairly little or no Fairly large extent very much  
see Tables 21-27

60. To what extent did the following order, snacks and other accessories from France?  
Very little Fairly little or no Fairly large extent very much  
see Tables 21-27

61. To what extent did the following drink from France?  
Very little Fairly little or no Fairly large extent very much  
see Tables 21-27

62. If you think of hot dishes in the French rations, to what extent were you satisfied with the following?

Very little Fairly little or no Fairly large extent very much  
Preparation Method  
Size of portion  
Satiety  
Appearance  
Odour  
Taste  
Variation in taste  
Consistency  
Nutritional qualities

63. To what extent did you do to warm up the main dishes of France enough?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

64. Which main course / correct or component / components did you like best?

65. Which main course / correct or component / components did you poorly?

66. Have you eaten food in the UK or eaten their field rations?

Yes

No

67. To what extent did you like it?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

68. Now that you have used them during an exercise, to what extent do you think they are better suited a Norwegian field rations?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

69. To what extent do you think the following aspects are the cause of the

Very little Fairly little or no Fairly large extent very much

So more appetite of the

Tasted better

Exciting Content

Improved variety

Better adapted to my nutritional needs

Practical cooking

Better functionality

Less waste

Easier to manage waste

70. Here you may want to comment on why you think they suited better or worse than the Norwegian field rations?

71. To what extent did you adapt to the use of English rations?

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

If a plan NRF operation can be expected using this or other countries rations for up to 4 weeks. You have now eaten this ration from England in about 10 days.

72. Based on the nutritional requirements of such rations, to what extent did you experience that England's rations satisfy your needs during this exercise?

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

73. To what extent do you think the following aspects may have contributed to adequate nutrition for you?

Very little Fairly little or no Fairly large extent very much

Good taste  
Practical cooking  
Varied diet  
Healthy foods  
Low additive

You have now taken these rations for about 10 days. We will now determine how the taste preferences of these rations may have changed through this exercise.

74. In the last exercise did you dealt British rations. To what extent did you like the taste of these rations, respectively, after the first day, midway and final day of the event?

Very little Fairly little or no Fairly large extent very much

First day  
Mid periode  
Last Day

75. To what extent are you altogether pleased with components from the British rations?

Very little Fairly little or no Fairly large extent very much

All

Dinner / lunch

Orders

Snacks / Accessories

Drink

76. To what extent did you like the breakfast dishes of England?

Very little Fairly little or no Fairly large extent very much

see Tables 21-27

77. To what extent did you lunch - and dinner dishes from England?

Very little Fairly little or no Fairly large extent very much

see Tables 21-27

78. To what extent did the following order, snacks and other supplies from England?

Very little Fairly little or no Fairly large extent very much

see Tables 21-27

79. To what extent did the following drink from England?

Very little Fairly little or no Fairly large extent very much

see Tables 21-27

80. If you think of hot dishes in the English rations, to what extent were you satisfied with the following?

Very little Fairly little or no Fairly large extent very much

Preparation Method

Size of portion

Satiety

Appearance

Odour

Taste

Variation in taste

Consistency

Nutritional qualities

81. To what extent did you do to warm up the main dishes from England sufficient?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

82. Which main course / correct or component / components did you like best?

83. Which main course / correct or component / components did you poorly?

84. Have you eaten food in the United States or eating their field rations?

Yes

No

85. To what extent did you like it?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

86. Now that you have used them during an exercise, to what extent do you think they are better suited a Norwegian field rations?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

87. To what extent do you think the following aspects are the cause of the  
Very little Fairly little or no Fairly large extent very much

So more appetite of the

Tasted better

Exciting Content

Improved variety

Better adapted to my nutritional needs

Practical cooking

Better functionality

Less waste

Easier to manage waste

88. Here you may want to comment on why you think they suited better or worse than the Norwegian field rations?

89. To what extent did you adapt to the use of American diets?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

If a plan NRF operation can be expected using this or other countries rations for up to 4 weeks. You have now eaten this ration from the United States for about 10 days.

90. Based on the nutritional requirements of such rations, to what extent did you experience that the United States their rations satisfy your needs during this exercise?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

91. To what extent do you think the following aspects may have contributed to adequate nutrition for you?

Very little Fairly little or no Fairly large extent very much

Good taste

Practical cooking

Varied diet

Healthy foods

Low additive

You have now taken these rations for about 10 days. We will now determine how the taste preferences of these rations may have changed through this exercise.

92. In the last exercise did you dealt American rations. To what extent did you like the taste of these rations, respectively, after the first day, midway and final day of the event?

Very little Fairly little or no Fairly large extent very much

First day

Mid periode

Last Day

93. To what extent are you altogether pleased with the components of the American rations?

Very little Fairly little or no Fairly large extent very much

All

Dinner / lunch

Orders

Snacks / Accessories

Drink

94. To what extent did you lunch - and dinner dishes from the U.S.?

Very little Fairly little or no Fairly large extent very much  
see Tables 21-27



95. To what extent did the following order, snacks and other supplies from the U.S.?

Very little Fairly little or no Fairly large extent very much

see Tables 21-27

96. To what extent did the following drinks from the U.S.?

Very little Fairly little or no Fairly large extent very much

see Tables 21-27

97. If you think of hot dishes in the American rations, to what extent were you satisfied with the following?

Very little Fairly little or no Fairly large extent very much

Preparation Method

Size of portion

Satiety

Appearance

Odour

Taste

Variation in taste

Consistency

Nutritional qualities

98. To what extent did you do to warm up the main dishes of the U.S. adequate?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

99. Which main course / correct or component / components did you like best?

100. Which main course / correct or component / components did you poorly?

101. Have you eaten food in Canada or eaten their field rations?

Yes

No

102. To what extent did you like it?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

103. Now that you have used them during an exercise, to what extent do you think they are better suited a Norwegian field rations?

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

104. To what extent do you think the following aspects are the cause of the Very little Fairly little or no Fairly large extent very much

So more appetite of the  
Tasted better  
Exciting Content  
Improved variety  
Better adapted to my nutritional needs  
Practical cooking  
Better functionality  
Less waste  
Easier to manage waste

105. Here you may want to comment on why you think they suited better or worse than the Norwegian field rations?

106. To what extent did you adapt to the use of Canadian rations?

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

If a plan NRF operation can be expected using this or other countries rations for up to 4 weeks. You have now eaten this ration from Canada for about 10 days.

107. Based on the nutritional requirements of such rations, to what extent did you that Canada's rations satisfy your needs during this exercise?

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

108. To what extent do you think the following aspects may have contributed to adequate nutrition for you?

Very little Fairly little or no Fairly large extent very much

Good taste

Practical cooking

Varied diet

Healthy foods

Low additive

You have now taken these rations for about 10 days. We will now determine how the taste preferences of these rations may have changed through this exercise.

109. In the last exercise did you dealt Canadian rations. To what extent did you like the taste of these rations, respectively, after the first day, midway and final day of the event?

Very little Fairly little or no Fairly large extent very much

First day

Mid periode

Last Day

110. To what extent are you altogether pleased with components from the Canadian rations?

Very little Fairly little or no Fairly large extent very much

All

Dinner / lunch

Orders

Snacks / Accessories

Drink

111. To what extent did you like the breakfast dishes from Canada?

Very little Fairly little or no Fairly large extent very much

see Tables 21-27

112. To what extent did you lunch - and dinner dishes from Canada?

Very little Fairly little or no Fairly large extent very much

see Tables 21-27

113. To what extent did the following order, snacks and other supplies from Canada?

Very little Fairly little or no Fairly large extent very much

see Tables 21-27

114. To what extent did the following drinks from Canada?

Very little Fairly little or no Fairly large extent very much

see Tables 21-27

115. If you think of hot dishes in the Canadian rations, to what extent were you satisfied with the following?

Very little Fairly little or no Fairly large extent very much

Preparation Method

Size of portion

Satiety

Appearance

Odour

Taste

Variation in taste

Consistency

Nutritional qualities

116. To what extent did you do to warm up the main dishes of Canada enough?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

117. Which main course / correct or component / components did you like best?

118. Which main course / correct or component / components did you poorly?

119. To what extent did you adapt to the use of Norwegian rations?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

If a plan NRF operation can be expected using this or other countries rations for up to 4 weeks. You have now eaten this ration from Slovenia for about 10 days.

120. Based on the nutritional requirements of such rations, the extent to which Norway experienced that their rations satisfy your needs during this exercise?

*Very little*

*Little*

*Neither nor*

*Much*

*Very much*

121. To what extent do you think the following aspects may have contributed to adequate nutrition for you?

You have now taken these rations for about 10 days. We will now determine how the taste preferences of these rations may have changed through this exercise.

122. In the last exercise did you dealt Norwegian rations. To what extent did you like the taste of these rations, respectively, after the first day, midway and final day of the event?

123. To what extent are you altogether pleased with components from the Norwegian rations?

- Entire
- Dinner / lunch
- Order
- Snacks / Accessories
- Drinking

124. To what extent did you like the breakfast dishes from Norway?

Very little Fairly little or no Fairly large extent very much  
see Tables 21-27

125. To what extent did you lunch - and dinner dishes from Norway?

Very little Fairly little or no Fairly large extent very much  
see Tables 21-27

126. To what extent did the following order, snacks and other supplies from Norway?

Very little Fairly little or no Fairly large extent very much  
see Tables 21-27

127. To what extent did the following drink from Norway?

Very little Fairly little or no Fairly large extent very much  
see Tables 21-27

128. If you think of hot dishes in the Norwegian rations, to what extent were you satisfied with the following?

Very little Fairly little or no Fairly large extent very much

Preparation Method

Size of portion

Satiety

Appearance

Odour

Taste

Variation in taste

Consistency

Nutritional qualities

129. To what extent did you do to warm up the main dishes of Norway adequate?

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

130. Which main course / correct or component / components did you like best?

131. Which main course / correct or component / components did you poorly?

132. The extent to which affected the officers to drink enough?

133. To what extent, affected officers you to eat enough?

- Very little*
- Little*
- Neither nor*
- Much*
- Very much*

134. Sex

135. Rank

136. Age

137. Height

138. Weight

139. Do you smoke?

Yes

No

140. Beyond the service requires, how much do you exercise?

- One to two times a week a week
- Three to four times a week
- More than four times a week
- Nothing beyond normal service

141. Where are you from (where did you grow up)?

- Big city (Oslo, Bergen, Trondheim)
- Medium-sized city (Stavanger, Drammen, Norway)
- Small city (Moss, Hamar, Lillehammer, Bodo)
- Integrated (non-city status)

Compared with other allies, Norway has few soldiers with a minority background. In relation to this study it is important to know if you have a minority background.

142. Where are you and your parents born?

Norway Africa Europe Asia South America North-America / Australia

You

Your mother

Your father

143. How many total years have you been in the military?

144. Which department do you belong?

ESK1

KDO

BNStab

MEK4

BKtropp

MEK3

POtropp

145. What kind of function you fill?

Infantry

Store Scheduled personnel

Management / staff

Other command post personnel

146. Can you set the longest period of only field rations that only the catering?





**ANNEX 4: PICTURES OF 7 ALLIED NATIONS RATIONS**



*Pickture 1: MRE's from USA*



*Pickture 2: Rations from Canada*





Picture 5: Rations from Germany



Picture 6: Rations from Slovenia



Sweden/Norway

**Pickture 6:** *Rations from Norway*

## **ANNEX 5: ALLIED NATIONS RATIONS CHARACTERISTICS (“THE MATRIX”)**

The data matrix contained in this annex is the result of a comprehensive effort by Research Task Group 154 to collect meaningful baseline information on identified national ration assets for:

- 1) Individual Operational Rations;
- 2) Special Purpose Rations; and
- 3) Supplements.

Inputs or submissions to the data matrix were provided by 12 countries including Australia, Belgium, Canada, Czech Republic, France, Germany, Italy, Netherlands, Norway, Slovenia, United Kingdom, and the United States. These countries responded to a broad NATO solicitation for specific input which correlated to those previously identified key data elements and their respective data element definitions. The breakout of data within the matrix is shown in sequence by Nutrition, Functional/Operational, and Components for each of the three asset classes of:

- 1) Individual Operational Rations;
- 2) Special Purpose Rations; and
- 3) Supplements.

This process was undertaken to provide the following tangible benefits:

- 1) Identification of member and partner nation operational ration assets which might support NRF deployment requirements.
- 2) Provide a basis for objective assessment of suitability and compatibility of identified rations and supplements to support the NRF mission.
- 3) Serve as a catalyst to identify areas of additional research focus to optimize future ration design to align nutritional and functional capabilities and technologies with operational mission requirements.

**Table E-1: RTG-154 NATO/PfP General Purpose Ration: Nutrition Assessment**

1	Country	USA	Canada (CAN)	France (FRA)	United kingdom BR
3	<b>Ration Name</b>	Meal, Ready-to-Eat (MRE)	Individual Meal Pack (IMP)	Ration de Combat Individuelle Réchauffable (RCIR) - Indiv	24 Hr General Purpose Operational Ration Pack
4	<b>Product Description</b>	ready-to-eat ration	ready-to-eat ration	combat ration	combat ration
5	<b>Intended Mission</b>	general purpose	general purpose	general purpose	general purpose
6	<b>Duration of Use</b>				
	a) # days consumption:	21 days continuous use	<= 30 days without supplement	30 days	30 days
	b) Limiting factors	menu fatigue			not applicable
	c) 30 day subsistence plan	group feeding; METT-TC	fresh supplements as soon as possible		group feeding
7	<b>Basis of Issue</b>	3 per 24 hr	3 per 24 hr	1 per 24 hr	1 per 24 hr
8	<b>Shelf Life</b>	36 mos	36 mos	24 mos	36 mos
9	<b>Storage Reqs</b>	80°F (27°C), none	dry, temp controlled, between 7°C and 24°C	none	ambient temp
10	<b>Nutrition Composition</b>	daily (24 hrs)	daily (24 hrs)	daily (24 hrs)	daily (24 hrs)
	a) Energy (kcal)	3995 kcal (16726 kJ)	4395 kcal (18401 kJ)	3200 kcal (13398 KJ)	4294 kcal (17978 kJ)
	b) Protein (g)	126	141	13% (104)	107
	c) Carbohydrate (g)	528	681	55% (440)	618
	d) Fat (g)	157	123	32% (114)	155
	e) Sodium (mg)	6850	9381	NaCl < 1% main course/ < 1.5% starters	8293
	f) Iron (mg)	26	26	20	21
	g) Calcium (mg)	1705	1016	> 800	1444
	h) Other (optional)	US NSOR AR 40-25	not available		see data sheet
	actual % Fat	35%	25%	32%	32%
	actual % CHO	53%	62%	55%	58%
	actual % Protein	13%	13%	13%	10%
	Totals	101%	100%	100%	100%
11	<b>Menus</b>				
	a) Total # menus	24	18	14	10
	b) Unspecified meals	unspecified	specified	specified	unspecified
	c) Breakfast	none	6	1	5
	d) Lunch	24	6	14	not applicable
	e) Dinner	24	6	14	10
	F Menu cycle	8	6	14	10
12	<b>Ration Content</b>				
	a) Food components	multiple	multiple	multiple	multiple
	b) Accessories	yes, variety	yes, variety	yes, variety	yes, variety
	c) Water treatment	no	no	yes	yes

**Table E-1: RTG-154 NATO/PfP General Purpose Ration: Nutrition Assessment (cont'd)**

1	Country	Slovenia (SLO)	Germany (DEU)	Norway (NOR)	Norway (NOR)
3	<b>Ration Name</b>	<b>Individual Ration</b>	<b>Einmannpackung (EPa)( Individual Combat Ration)</b>	<b>FR3800 (Feltrasjon 3800 kcal) Tropical</b>	<b>FR3800 (Feltrasjon 3800 kcal) Arctic</b>
4	<b>Product Description</b>	individual ration	combat ration	individual combat ration	individual combat ration
5	<b>Intended Mission</b>	general purpose	general purpose	general purpose (tropical)	general purpose (arctic)
6	<b>Duration of Use</b>				
	a) # days consumption:	10 days	30 days	30 days	30 days
	b) Limiting factors	acceptance, lack of variety		acceptance, lack of variety	acceptance, lack of variety
	c) 30 day subsistence plan	fresh food, cooked meals	group rations and fresh food	subsistence plan > 30 days	subsistence plan > 30 days
7	<b>Basis of Issue</b>	1 per 24 hr	1 per 24 hr	1 per 24 hr	1 per 24 hr
8	<b>Shelf Life</b>	24 mos	42 mos	24 mos	24 mos
9	<b>Storage Reqs</b>	2-25°C, rel. hum. max 70%, no direct sunlight	21°C, dry, ambient temp, shady	dry, ambient temp, shady, storage temp +22°C for 24 months	dry, ambient temp, shady, storage temp +22°C for 24 months
10	<b>Nutrition Composition</b>	daily (24 hrs)	daily (24 hrs)	daily (24 hrs)	daily (24 hrs)
	a) Energy (kcal)	3537 kcal (14808 kJ)	3524 kcal (14754 kJ)	3762 kcal (15751 kJ)	4044 kcal (16931 kJ)
	b) Protein (g)	95	96	90	91
	c) Carbohydrate (g)	518	501	649	614
	d) Fat (g)	110	126	89	139
	e) Sodium (mg)	not available	8300	not available	not available
	f) Iron (mg)	not available	19	not available	not available
	g) Calcium (mg)	not available	900	not available	not available
	h) Other (optional)	not available		see data sheet	see data sheet
	actual % Fat	29%	32%	21%	31%
	actual % CHO	60%	57%	69%	61%
	actual % Protein	11%	11%	10%	9%
	Totals	100%	100%	100%	101%
11	<b>Menus</b>				
	a) Total # menus	3	6	8	8
	b) Unspecified meals	unspecified	unspecified	unspecified	unspecified
	c) Breakfast	none	3	7	7
	d) Lunch	none	3	8	8
	e) Dinner	none	3	8	8
	F Menu cycle		3	8	8
12	<b>Ration Content</b>				
	a) Food components	multiple	multiple	multiple	multiple
	b) Accessories	yes, variety	yes, variety	yes, variety	yes, variety
	c) Water treatment	no	yes	yes	yes

**Table E-2: RTG-154 NATO/PfP General Purpose Ration: Functional/Operational Assessment**

	Country	USA	Canada (CAN)	France (FRA)	United Kingdom (BR)
3	<b>Ration Name</b>	<b>Meal, Ready-to-Eat (MRE)</b>	<b>Individual Meal Pack (IMP)</b>	<b>Ration de Combat Individuelle Réchauffable (RCIR) - Indiv</b>	<b>24 Hr General Purpose Operational Ration Pack</b>
13	<b>Water Requirements</b>	23 oz (680 ml) H2O for all beverages per meal; 2040 ml per day total	800 ml to 1,100 ml depending on meal; approx 2,890 mL for one day	1 litre (1000 ml)	5170 mls for all beverages based on manufacturer's recommendations
14	<b>Prep &amp; Suppt Reqs</b>	none; ready to eat; optional heating; bev rehydration	if users do not bring FRH, container and 250 ml of water req to heat pouch (but can be eaten cold); canteen cup req to heat and drink beverages	canteen cup and cutlery	hexamine cooker, fuel block, canteen cup, mess tin, cutlery; pouched components can be eaten hot or cold; water used to heat retort pouch is used for rehydrating beverages and consequently, water requirement for heating pouch is individual choice
15	<b>Heater</b>				
	a) Furnished w/ ration	yes, H2O activated flameless ration heater (FRH) provided w/ ration; 1 ea	no, flameless ration heaters (FRH) are supplied separately	match light fuel tab, foldable stand, tool for heating hot can	provided with the ration
	b) Special requirements	2 oz (59 ml)/ meal H2O to activate FRH. 177 ml per day total	FRH are subjected to Transport of Dangerous Goods Regulations	none	water not required
16	<b>Packaging</b>				
	a) Packaging of the ration or individual meal	food grade, low density polyethylene (LDPE) meal bag w/ peelable seal; case is V2 grade fiberboard box	the ration is packaged in a food grade paper bag lined with foil in the inside	box wrapped in a waterproof film; compact, rigid, shockresist, waterproof pkg	ration packed in fiberboard box (inner); 10 rations packed in waterproof fiberboard box (outer)
	b) Packaging of internal components of the ration	foil laminate, flexible retort pouches, comm. pkg & overwrapped in foil laminate pouches; glass bottle for tabasco sauce	foil lam retort pouches (quad pouch), foil lam pouches for other compts & commercial pkg; retort pouches in cardboard sleeve	cans, plastic and metallic bags, boxes	indiv flex retort pouches; cmpnts packed in commercial packaging; sundries overwrapped in polythene bag as 2nd barrier; glass bottle for tabasco
17	<b>Weight</b>	4.5 lbs (1.5 lbs/meal x 3 meals)/ soldier/day (2.04 kg)	2.2 kg (total for breakfast, lunch, supper IMP)	1600 g (1.6kg)	1.8 to 2.0 kg/ ration; warfighter may carry up to 3 x 24 hr rations
18	<b>Dimensions/ Cube</b>	.24 cubic feet per soldier per day (.08 cu ft./meal x 3) (6796 cm3)	3 meals: 20 cm x 24 cm x 15.5 cm. Cube: 7,440 cm3 or 7.44 dm3	2800 cc (2800 cm3)	inner carton (4180 cm3); outer carton (49190 cm3)
19	<b>Shipping Container</b>				
	a) Dimensions/ cube	case dim: 17" L x 9.6" W x 10.8" D; cube: 1.02 cu ft./case. (28880 cm3) 48 cases/pallet, wght 1,098 lbs., 56.1 cu ft. (498 kg, 1589 dm3/1.569 m3)	dimensions: 41.7 cm long x 33.4 cm wide x 22 cm high. Cube: 30,641.16 cm3/cc or 0.03m cu	1 pallet = 252 rations = 1.26 mc (m3) 1 container ISO 20 feet = 4032 rations	pallet hght (including pallet) 1.65 metres; pallet width 1.19 metres, pallet length 1.03 metres; can be stowed 3 pallets high; 2.03 cu metres/ pallet; NATO pall
	b) Weight	21.8 lbs/case (9.8 kg)	8.95 kg/case (box)	1 pallet = 475 kilograms	pallet wght 760 kgs incl pallet; outer wght 20 kg 1x10 for 10 warfighters
	c) Quantity or yield per case	12 meals/case; 4 soldiers can be sustained per day (24 hr) basis from a single case	10 meals (10 breakfasts or 10 lunches or 10 suppers) i.e one meal for 10 soldiers; a mix of the 6 menus for each meal	1 case = 12 rations 1 mixed pallet (7 menus) = 21 cases = 252 rations	
	d) Pallet	48 cases, 576 total meals per pallet; each pallet consists of 3 rows of 4 cases per layer & 4 layers high; pallet load dimension of	32 cases/boxes of breakfast, or lunch, or supper per pallet; 106.6 days of ration for one soldier; Pallet size: Loaded pallets measure 40" x 48" x		350 rations/ pallet unit load (35 outers x 10 inners) 5 outers/ layer; 7 layers/pallet



		42.92"l x 51.35"w x 37.46" h = 1.09m l x 1.304m w x .9515m h	39" high (including the pallet) (1.016m x 1.22m x 1m)		
	e) Menu variety on pallet	pallet load has 24 cases of menus 1-12; 24 cases of menus 13-24; 192 days provision for 1 soldier	each pallet contains 6 different menus of breakfast, or of lunch, or of supper		not applicable; mixed menu ration
20	<b>Additional Data</b>		procurement process takes 20 months from menu selection to assembly		menu list, labels, product description, ingredients, wght, etc.
21	<b>Comments</b>	Tan menu bag	a small qty of a special ration, which is certified Halal, Kosher & vegetarian, is procured separately from the regular IMPs; it is a std commercial product with a 12-month shelf line, offered in 4 different main course menus	traceability ensured; compts analysed (ISO 17025); GMO, artifi color/aromas forbidden	commercial 24 hr Multi-Climate Ration under development for release 2010; nutritional content, case sizes, gross weight and pallet configuration should not change significantly

**Table E-2: RTG-154 NATO/PfP General Purpose Ration: Functional/Operational Assessment (cont'd)**

	<b>Slovenia (SLO)</b>	<b>Germany (DEU)</b>	<b>Norway (NOR)</b>	<b>Norway (NOR)</b>
1	<b>Country</b>	<b>Slovenia (SLO)</b>	<b>Germany (DEU)</b>	<b>Norway (NOR)</b>
3	<b>Ration Name</b>	<b>Individual Ration</b>	<b>Einmannpackung (EPa)( Individual Combat Ration)</b>	<b>FR3800 (Feltrasjon 3800 kcal) Tropical</b> and <b>FR3800 (Feltrasjon 3800 kcal) Arctic</b>
13	<b>Water Requirements</b>	3500 ml	3.1 liters (3100 ml) for all beverages	3.5 liters (3500 ml)
14	<b>Prep &amp; Suppt Reqs</b>	water and heater	water, heater unit, cutlery plate/cup, container & heating tablets, steel knife required to open main meal	water and a spoon is needed for preparation
15	<b>Heater</b>			
	a) Furnished w/ ration	flameless heater + ethanol based gel heater supplied separately	no	no
	b) Special requirements	do not use gel heater in enclosed atmosphere		no
16	<b>Packaging</b>			
	a) Packaging of the ration or individual meal	polyethylene bag	fiberboard box	light-weight flexible pouch
	b) Packaging of internal components of the ration	retort pouches, foil lam pouches, cans	lt-wght aluminum-plastic containers; aluminium-plastic pouches; plastic pouches & commercial packaging	components are comercial products; wrapping on freese dried products are different, but same contents
17	<b>Weight</b>	1600 g (1.6kg)	1.6 kg	1000 g (1kg)
18	<b>Dimensions/ Cube</b>	approx 30 cm x 5 cm x 35 cm (ca 5,3 L)	dim: 23.8 cm x 18.2 cm x 7.4 cm; Vol: 3205 cm3	dimensions: 18 cm x 18 cm x 14 cm; volume: 4536 cm3
19	<b>Shipping Container</b>			
	a) Dimensions/ cube	43 cm x 59 cm x 39 cm (98 900 cm3)	38.9 cm x 24.8 cm x 24.3 cm (23443 cm3)	hght=30 cm; length=39 cm; width=39 cm; 45630 cm3
	b) Weight	17000 g (17kg)	10 kg	8000 g (8kg)
	c) Quantity or yield per case	10 rations	1 daily ration for 6 soldiers	1 daily ration for 8 soldiers
	d) Pallet	160 rations per pallet; pallet: 1.2 m x 0.8 m x 1.8 m x 1.8 m; each pallet contains 16 boxes x 10 rations = 160 days of provisions	dim: 1.15 m x 1.20 m x 0.80 m; 260 daliy rations/ pallet	144 rations per pallet
	e) Menu variety on pallet	each pallet has a different menu	up to 3 different types of rations depending on task	8
20	<b>Additional Data</b>	pallets secured with shrink wrap		menus provides 1 lactose free, 1 vegetarian and 1 gluten free; all menus are porc free to support muslim soldiers
21	<b>Comments</b>			lead time 14 days for < 10.000 FR3800; rations have been tested during expeditions to Greeland, South pole, & daily in Afghanistan

**Table E-3: RTG-154 NATO/PfP General Purpose Ration: Components**

1	Country	USA	Canada (CAN)	France (FRA)	United Kingdom (BR)
3	Ration Name	Meal, Ready-to-Eat (MRE)	Individual Meal Pack (IMP)	Ration de Combat Individuelle Réchauffable (RCIR) - Indiv	24 Hr General Purpose Operational Ration Pack
12	<b>Ration Content</b>				
	a) Food components	<p>24 different menus with improvements/ changes annually, typical as shown;</p> <p>1 entrée (chicken, beef, pork, fish, Vegetable or pasta dish)</p> <p>1 starch, Vegetable, or fruit (spiced apples, wet pack fruit, beans, rice, nuts, mashed potato, chowder, corn, granola, stuffing, macaroni &amp; cheese)</p> <p>1 cracker or bread (plain bread, wheat bread, chipotle bread, Vegetable cracker, tortilla)</p> <p>1 spread (variety of cheese spreads, peanut butter, jelly, jam, apple butter)</p> <p>1 dessert/snack (scone, fig bar, raisin nut mix, toaster pastry, bars, cookie, pound cake, dried fruit, muffin top, choc &amp; vanilla pudding, brownie, pretzels, cobbler)</p> <p>multiple beverages (flavored coffees - french vanilla, mocha, irish cream; cocoa, dairy shake, CHO electrolyte beverage, sugar free beverage, CHO fortified beverage base)</p> <p>seasoning (ground red pepper, bbq sauce, hot sauce, salsa verde, bbq seasoning, butter buds, seasoning blend, pizza seasoning, steak sauce, green hot sauce, picante sauce, fat free mayonaise, jalapeno ketchup)</p>	<p>each meal (breakfast, lunch and supper)</p> <p>contains:</p> <p>1 entrée in retort pouch;</p> <p>1 fruit/baked dessert in retort pouch;</p> <p>1 flavoured sport drink;</p> <p>1 bread in a pouch or 1 package of cheese filled crackers;</p> <p>2 packets of jam or peanut butter or honey or jelly;</p> <p>2 hot beverages (coffee or tea or flavoured coffee or herbal tea);</p> <p>condiments (salt, pepper, sugar, whitener, ketchup, mustard, chewing gum, candy);</p> <p>a breakfast meal also includes 1 packet of dry cereal and 1 packet of hot chocolate</p> <p>a lunch meal also includes 1 chocolate bar;</p> <p>additional condiments (pepper sauce, cranberry jelly, steak sauce, soya sauce); some lunch meals may have a dried starch (instant mashed potatoes or flavour rice or dressing mix), and a pudding</p> <p>a supper meal also includes 1 packet of dry soup, some meals may have a dried starch (instant mashed potatoes or flavour rice), 1 pack of cookies, and a pudding</p>	<p>dehydrated muesli (cereals &amp; milk)</p> <p>dehydrated bevs for breakfast (tea, coffee, sugar)</p> <p>dehydrated cold beverage biscuits (salted &amp; sweet)</p> <p>2 starters (1 dehydrated soup, 1 canned pâté)</p> <p>2 main courses (canned food)</p> <p>1 canned process cheese or 1 canned milky dessert</p> <p>sweets: choc, fruit jelly, caramels, nougat</p>	<p>1 breakfast</p> <p>1 main meal (1 or 2 retort pouches)</p> <p>1 pudding</p> <p>1 packet of oatmeal block</p> <p>1 packet of fruit filled biscuits</p> <p>1 packet of biscuits brown</p> <p>2 chocolate bars</p> <p>1 pate (meat or vegetarian)</p> <p>1 packet boiled sweets</p> <p>1 packet chewing gum</p> <p>6 sachets of sugar</p> <p>6 sachets of beverage whitener</p> <p>6 stick packs of instant coffee</p> <p>2 sachets of instant white tea</p> <p>1 sachet of fruit grains</p> <p>1 packet of soup</p> <p>1 packet of drinking chocolate</p> <p>1 sachet of isotonic drink</p> <p>1 packet of vegemite</p> <p>1 bottle tabasco</p>
	b) Accessories	<p>each ration is equipped with a spoon, flameless ration heater, and specific accessory packet A, B, or C that consists of the following components; each ration will also have one of the identified candy items as shown;</p> <p>accessory packet A: coffee, cream sub, sugar, salt, gum, matches, tissue, towelette</p>	<p>plastic spoon</p> <p>towelette</p> <p>matches</p> <p>paper towel</p> <p>toothpick</p>	<p>water purifying pills</p> <p>heater</p> <p>multi-purpose tissues</p> <p>waste bag</p>	<p>1 waterproof matches</p> <p>1 paper tissues</p> <p>water purification tablets</p>

	accessory packet B: lemon tea, salt, gum, matches, tissue, towelette accessory packet C: apple cider, salt, gum, matches, tissue, towelette candy I: toffee roll-chocolate flavored, toffee, chocolate, chocolate covered coffee beans candy II: chocolate-plain disks, chocolate with peanuts, peanut butter disks candy III: cinnamon candies, fruit flavored			
c) Water treatment	no, not included	no	yes	yes, 1x10 water purification tablets

**Table E-3: RTG-154 NATO/PfP General Purpose Ration: Components (cont'd)**

1	Country	Slovenia (SLO)	Germany (DEU)	Norway (NOR)	Norway (NOR)
3	Ration Name	Individual Ration	Einmannpackung (EPa)( Individual Combat Ration)	FR3800 (Feltrasjon 3800 kcal) Tropical	FR3800 (Feltrasjon 3800 kcal) Arctic
12	<b>Ration Content</b>				
	a) Food components	coffee, instant coffee whitener tee, instant vitamin-mineral drink sugar vitamin enriched bonbons energy bar chocolate honey or marmalade muesli (dehydrated) dessert (dehydrated) main course (dehydrated) main course (retort pouch) pate (liver or fish) canned course (fish or meat) bread like component	meals 2 x 300 g dessert/snack 1 x 150 g bread 1 x 170 g cracker 1x 125 g canned sausage 2 x 50 g cheese spread 1 x 50 g jam 2 x 25 g chocolate 1 x 50 g chewing gum 1 x 12 pcs beverage powder (fortified with minerals and vitamins) 4 x 32.5 g coffee extract 2 x 3.5 g tea extract 2 x 1.2 g sugar 4 x 12.5 g coffee creamer (dairy based) 2 x 3 g salt 1 x 3 g	tuna energy bars energy drinks (fortied w/ minerals) (raspberry/lemon/peach) instant hot chocolate oatmeal biscuits instant black currant drink chewing gum (sugarfree) instant coffee raisins (rice bread in gluten free menu) (jam in vegetarian menu)	jam (forest berries/black currant) macerell energy bar energy drinks (fortied with minerals) (raspberry/lemon/peach) instant hot chocolate oatmeal biscuits instant black currant drink chewing gum (sugarfree) instant coffee raisins (rice bread in gluten free menu) chocolate
	b) Accessories	disinfection handkerchief, can opener, waste bag, matches	multipurpose paper tissue 4 sheets moist towelette 1 ea matches 20 ea water purification tablet	refreshing tissue / towelette (germicidal wipe) water purification tablets (chlorine)	refreshing tissue / towelette (germicidal wipe) water purification tablets (chlorine)
	c) Water treatment	not included	yes	yes	yes

**Table E-4: RTG-154 NATO/PfP Special Purpose Ration: Nutrition Assessment**

1	Country	USA	USA	USA	Germany (DEU)
3	<b>Ration Name</b>	<b>Meal, Cold Weather (MCW)</b>	<b>Food Packet, Long Range Patrol (LRP)</b>	<b>First Strike Ration (FSR)</b>	<b>Einmannpackung, Leicht (EPa, Leicht) (Ind Combat Rat, Lt-Wght)</b>
4	<b>Product Description</b>	light weight freeze dried ration	light weight freeze dried ration	calorie dense, eat out-of-hand, ration	light weight ration
5	<b>Intended Mission</b>	cold weather	assault, special operations	assault	special forces
6	<b>Duration of Use</b>				
	a) # days consumption:	not stated	10 days	10 days	21 days
	b) Limiting factors	menu fatigue	calorie intake	calorie intake, menu fatigue	energy content/calorific value
7	c) 30 day subsistence plan	group feeding; METT-TC	group feeding; METT-TC	MRE, group feeding; METT-TC	group rations and fresh food
8	<b>Basis of Issue</b>	3 per 24 hr	1 per 24 hr	1 per 24 hr	1 per 24 hr
9	<b>Shelf Life</b>	36 mos	36 mos	24 mos	24 mos
10	<b>Storage Reqs</b>	80°F (27°C), none	80°F (27°C), none	80°F (27°C), none	21°C, dry, ambient temp, shady
	<b>Nutrition Composition</b>	daily (24 hrs)	daily (24 hrs)	daily (24 hrs)	daily (24 hrs)
	a) Energy (kcal)	4599 kcal (19255 kJ)	1533 kcal (6418 kJ)	2844 kcal (11907 kJ)	2198 kcal (9203 kJ)
	b) Protein (g)	162	54	87	67
	c) Carbohydrate (g)	599	200	371	298
	d) Fat (g)	175	58	124	82
	e) Sodium (mg)	7715	2572	4034	11300
	f) Iron (mg)	29	10	15	37
	g) Calcium (mg)	1690	563	655	3600
	h) Other (optional)	US NSOR AR 40-25	US NSOR AR 40-25	US NSOR AR 40-25	
	actual % Fat	34%	34%	39%	34%
	actual % CHO	52%	52%	52%	54%
	actual % Protein	14%	14%	12%	12%
	Totals	100%	100%	104%	100%
11	<b>Menus</b>				
	a) Total # menus	12	12	3	10
	b) Unspecified meals	unspecified	unspecified	unspecified	unspecified
	c) Breakfast	3	3	1	4
	d) Lunch	9	9	2	5
	e) Dinner	9	9	2	5
	F Menu cycle	4	12	3	5
12	<b>Ration Content</b>				
	a) Food components	multiple	multiple	multiple	multiple
	b) Accessories	yes, variety	yes, variety	yes, variety	yes, variety
	c) Water treatment	no	no	no	yes

**Table E-4: RTG-154 NATO/PfP Special Purpose Ration: Nutrition Assessment (cont'd)**

1	Country	Norway (NOR)	Norway (NOR)
3	<b>Ration Name</b>	<b>FR5000 (Feltrasjon 5000 kcal) Tropical</b>	<b>FR5000 (Feltrasjon 5000 kcal) Arctic</b>
4	<b>Product Description</b>	individual combat ration	individual combat ration
5	<b>Intended Mission</b>	high intensity exercise (special	high intensity exercise (special forces) (arctic)
6	<b>Duration of Use</b>		
	a) # days consumption:	30 days	30 days
	b) Limiting factors	acceptance, lack of variety	acceptance, lack of variety
7	c) 30 day subsistence plan	subsistence plan > 30 days	subsistence plan > 30 days
8	<b>Basis of Issue</b>	1 per 24 hr	1 per 24 hr
9	<b>Shelf Life</b>	24 mos	24 mos
10	<b>Storage Reqs</b>	dry, ambient temp, shady, storage temp +22°C for 24 months	dry, ambient temp, shady, storage temp +22°C for 24 months
	<b>Nutrition Composition</b>		
	a) Energy (kcal)	4971 kcal (20813 kJ)	5188 kcal (21721 kJ)
	b) Protein (g)	123	119
	c) Carbohydrate (g)	820	770
	d) Fat (g)	131	183
	e) Sodium (mg)	not available	not available
	f) Iron (mg)	not available	not available
	g) Calcium (mg)	not available	not available
	h) Other (optional)		
	actual % Fat	24%	32%
	actual % CHO	66%	59%
	actual % Protein	10%	9%
	Totals	100%	100%
11	<b>Menus</b>		
	a) Total # menus	7	7
	b) Unspecified meals	unspecified	unspecified
	c) Breakfast	7	7
	d) Lunch	7	7
	e) Dinner	7	7
	F Menu cycle	7	7
12	<b>Ration Content</b>		
	a) Food components	multiple	multiple
	b) Accessories	yes, variety	yes, variety
	c) Water treatment	yes	yes

**Table E-5: RTG-154 NATO/PfP Special Purpose Ration: Functional/Operational Assessment**

1	Country	USA	USA	USA	United kingdom BR)
3	Ration Name	Meal, Cold Weather (MCW)	Food Packet, Long Range Patrol (LRP)	First Strike Ration (FSR)	24 Hr General Purpose Operational Ration Pack
13	<b>Water Requirements</b>	28-40 oz (828-1182 ml) H2O per meal; 84-120 oz (2484-3548 ml) H2O/day total	28-40 oz (828-1182 ml) H2O per meal; 84-120 oz (2484-3548 ml) H2O/day total	24 oz (710ml) H2O	
14	<b>Prep &amp; Suppt Reqs</b>	rehydration and heating of water for components; water required to rehydrate components	rehydration and heating of water for components	24 oz (710ml) H2O	
15	<b>Heater</b>				
	a) Furnished w/ ration	no	no	no	
	b) Special requirements	fuel tabs issued separately for heating H2O in canteen cup for rehydration	fuel tabs issued separately for heating H2O in canteen cup for rehydration	none	
16	<b>Packaging</b>				
	a) Packaging of the ration or individual meal	food grade, low density polyethylene (LDPE) meal bag w/ peelable seal; case is V2 grade fiberboard box	food grade, low density polyethylene (LDPE) meal bag w/ peelable seal; case V2 grade fiberboard box	meal assbly shrink wrapped or heat-sealed; meal bag w/peelable seal; case V2 fiberboard box	
	b) Packaging of internal components of the ration	dehydrated entrées vac pkd in foil brickpack; compts pkg in foil lam retort pouches, comm pkg & overwrapped in foil lam pouches	dehydrated entrées vac pkd in foil brickpack; compts pkg in foil lam retort pouches, comm pkg & overwrapped in foil lam pouches	compts pkg in foil laminate pouches, comm pkg & overwrapped in foil laminate pouches	
17	<b>Weight</b>	3 lbs (1 lb/meal x 3 meals) per soldier/day (1.36 kg)	1lb (1 lb/meal x 1 meal) per soldier/day (0.45 kg)	2.5 lbs per soldier/day (1.13 kg)	
18	<b>Dimensions/ Cube</b>	.12 cubic feet per soldier per day (.04 cu ft./meal x 3) (3398 cm3)	.04 cu ft. per soldier per day (1133 cm3)	.10 cu ft. per soldier per day (2832 cm3)	
19	<b>Shipping Container</b>				
	a) Dimensions/ cube	case dim: 17" L x 9.6" W x 10.8" D; cube: 1.02 cu ft./case. (28880 cm3) 48 cases/pallet, wght 758 lbs., 56.1 cu ft. (343.8 kg, 1589 dm3/1.569 m3)	case dim: 17" L x 9.6" W x 10.8" D; cube: 1.02 cu ft./case. (28880 cm3) 48 cases/pallet, wght 758 lbs., 56.1 cu ft. (343.8 kg, 1589 dm3/1.569 m3)	case dim: 17" L x 9.6" W x 10.8" D; cube: 1.02 cu ft./case. (28880 cm3)	
	b) Weight	15.0 lbs/case (6.8 kg)	15.0 lbs/case (6.8 kg)	25 lbs/case (gross), 2.5 lbs/ration (11.3 kg) (1.1 kg)	
	c) Quantity or yield per case	12 meals/case; 4 soldiers can be sustained per day (24 hr) basis from a single case	12 meals/case; 12 soldiers can be sustained per day (24 hr) basis from a single case	9 rations/case; 9 soldiers can be sustained per day (24 hr) basis from a single case	



	d) Pallet	48 cases, 576 meals per pallet; each pallet consists of 3 rows of 4 cases per layer & 4 layers high; pallet load dim: 42.92"l x 51.35"w x 37.46" h = 1.09m l x 1.304m w x .9515m h	48 cases, 576 total meals per pallet; pallet consists of 3 rows of 4 cases per layer & 4 layers high; pallet load dim: 42.92"l x 51.35"w x 37.46" h = 1.09m l x 1.304m w x .9515m h	48 cases, 432 total meals per pallet; each pallet consists of 3 rows of 4 cases per layer & 4 layers high; pallet load dim: 42.92"l x 51.35"w x 37.46" h = 1.09m l x 1.304m w x .9515m h
	e) Menu variety on pallet	pallet load has 48 cases of menus 1-12; 192 days provision for 1 soldier	pallet load has 48 cases of menus 1-12; 576 days provision for 1 soldier	pallet load has 48 cases of menus 1-9; 432 days provision for 1 soldier
20	<b>Additional Data</b>			
21	<b>Comments</b>	white menu bag	tan menu bag	TTI label on each case; pallet contains 48 cases

**Table E-5: RTG-154 NATO/PfP Special Purpose Ration: Functional/Operational Assessment (cont'd)**

1	Country	Germany (DEU)	Norway (NOR)	Norway (NOR)
3	Ration Name	Einmannpackung, Leicht (EPA, Leicht) (Ind Combat Ration, Light-Wght)	FR5000 (Feltrasjon 5000 kcal) Tropical	FR5000 (Feltrasjon 5000 kcal) Arctic
13	Water Requirements	3.05 liters (3050 ml) for all beverages, dairy shake and dehydrated meals	3.8 liters (3800 ml)	3.8 liters (3800 ml)
14	Prep & Suppt Reqs	water, heater unit, cutlery, plate/cup, & heating tablets	water and a spoon is needed for preparation	water and a spoon is needed for preparation
15	Heater			
	a) Furnished w/ ration	no	no	no
	b) Special requirements		no	no
16	Packaging			
	a) Packaging of the ration or individual meal	fiberboard box	light-weight flexible pouch	light-weight flexible pouch
	b) Packaging of internal components of the ration	pouches made from aluminium-plastic (semi-rigid and flexible), plastic pouches and commercial packaging	components are comercial products; wrapping on freese dried products are different, but same contents	components are comercial products; wrapping on freese dried products are different, but same contents
17	Weight	0.75 kg	1200 g (1.2kg)	1200 g (1.2kg)
18	Dimensions/ Cube	20 cm x 21 cm x 25.5 cm (10710 cm <sup>3</sup> ) for 5 rations put together in a fiberboard box	dimensions: 18 cm x 18 cm x 15 cm; volume: 4860 cm <sup>3</sup>	dimensions: 18 cm x 18 cm x 15 cm; volume: 4860 cm <sup>3</sup>
19	Shipping Container			
	a) Dimensions/ cube	20 cm x 21 cm x 25.5 cm (10710 cm <sup>3</sup> ) for 5 rations put together in a fiberboard box	hght=30 cm; length=39 cm; width=39 cm; 45630 cm <sup>3</sup>	hght=30 cm; length=39 cm; width=39 cm; 45630 cm <sup>3</sup>
	b) Weight	3.6 kg	9600 g (9.6kg)	9600 g (9.6kg)
	c) Quantity or yield per case	1 daily ration for 5 soldiers	1 daily ration for 8 soldiers	1 daily ration for 8 soldiers
	d) Pallet	dim: 1.15 m x 1.20 m x 0.80 m; 272 daliy rations/ pallet	144 rations per pallet	144 rations per pallet
	e) Menu variety on pallet	up to 5 different rations depending on task	assorted pallets	assorted pallets
20	Additional Data		menus provides 1 vegetarian; all menus are porc free to support muslim soldiers	menus provides 1 vegetarian; all menus are porc free to support muslim soldiers
21	Comments		lead time 14 days for < 10.000 FR5000; rations tested during	lead time 14 days for < 10.000 FR5000; rations tested during

expeditions to  
Greenland, South pole, &  
Afghanistan

expeditions to  
Greenland, South pole, &  
Afghanistan

**Table E-6: RTG-154 NATO/PfP Special Purpose Ration: Components**

1	Country	USA	USA	USA	Germany (DEU)
3	Ration Name	Meal, Cold Weather (MCW)	Food Packet, Long Range Patrol (LRP)	First Strike Ration (FSR)	Einmannpackung, Leicht (EPa, Leicht) (Individual Combat Ration, Light-Weight)
12	<b>Ration Content</b>				
	a) Food components	12 different menus 1 freeze dried entrée (chicken, beef, pork, turkey, pasta, egg dish) 1 starch (ramen noodles soup, rice, cream of wheat cereal, oatmeal, granola, starch jellies) 1 cracker (MRE cracker) 1 spread (cheese spread, peanut butter) 1 dessert/snack (fig bar, raisin nut mix, toaster pastry, peanut butter M&Ms, sports bar, cookie, brownie, pound cake, pretzels) multiple beverages (cappuccino, coffee, cocoa, lemon tea, cider, orange beverage, vanilla, chocolate or strawberry dairy shake drink)	12 different menus 1 freeze dried entrée (chicken, beef, pork, turkey, pasta, egg dish) 1 starch (ramen noodles soup, rice, cream of wheat cereal, oatmeal, granola, starch jellies) 1 cracker (MRE cracker) 1 spread (cheese spread, peanut butter) 1 dessert/snack (fig bar, raisin nut mix, toaster pastry, peanut butter M&Ms, sports bar, cookie, brownie, pound cake, pretzels) multiple beverages (cappuccino, coffee, cocoa, lemon tea, cider, orange beverage, vanilla, chocolate or strawberry dairy shake drink)	3 different menus items are light weight, calorically dense, eat-out-of-hand foods, require little or no prep 1-2 shelf stable sandwiches (bacon/cheddar, pepperoni, italian, honey bbq beef) 1 shelf stable pouched chicken or tuna 2 starch items (filled french toast, wheat snack bread, crackers, tortilla, toaster pastry) 2 beverages (powdered base orange, lemonlime, grape or tropical punch) misc snacks (nut/fruit mix, carbohydrate fortified applesauce, energy bar) 2 beef snacks (teriyaki, bbq) 1 dessert bar (peanut butter, mocha, choc banana) 1-2 spreads (jalapeno or plain cheese, peanut butter) 1 caffeinated gum 1 hot sauce 1 mayonaise	dehydrated meals 2 x 80 g dairy powder (fortified) 1 x 50 g energy bar 2 x 75 g cookies 1 x 100 g chewing gum 1 x 12 pcs sugar 2 x 12.5 salt 1 x 3 g coffee creamer (dairy based) 1 x 3 g beverage powder (fortified w/ minerals) 30 g vitamin tablets 2 x 4.5 g coffee extract 2 x 3.5 g tea extract 1 x 1.2 g
	b) Accessories	each ration is equipped with a spoon and	each ration is equipped with a spoon and	1 zip-lock pouch (for item storage) 1 plastic spoon	multipurpose paper tissue 2 sheets matches 5 ea

	<p>accessory packet that consists of the following components; accessory packet items: coffee, cream sub, sugar, salt, chewing gum, matches, tissue, hand cleaner, hot sauce, matches</p>	<p>accessory packet that consists of the following components; accessory packet items: coffee, cream sub, sugar, salt, chewing gum, matches, tissue, hand cleaner, hot sauce, matches</p>	<p>2 towelettes 1 xylitol chewing gum 1 accessory packet A, B, or C is provided which consists of the following components; Accessory Packet A: coffee, cream sub, sugar, towelette, salt, matches, tissue Accessory Packet B: lemon tea, towelette, salt, matches, tissue Accessory Packet C: apple cider, towelette, salt, matches, tissue</p>	<p>water purification tablet</p>
c) Water treatment	no, not included	no, not included	no, not included	yes

**Table E-6: RTG-154 NATO/PfP Special Purpose Ration: Components(cont'd)**

1	<b>Country</b>	<b>Norway (NOR)</b>	<b>Norway (NOR)</b>
3	<b>Ration Name</b>	FR3800 (Feltrasjon 3800 kcal) Tropical	FR3800 (Feltrasjon 3800 kcal) Arctic
12	<b>Ration Content</b>		
	a) Food components		
	b) Accessories		
	c) Water treatment		

**Table E-7: RTG-154 NATO/PfP Supplement: Nutrition Assessment**

1	Country	Canada (CAN)	United States (USA)
3	Supplement Name	Light Meal Combat Pack (LMC)	Food Packet, Carbohydrate Supplement (CarboPack)
	Description	ration supplement	ration supplement.
	Intended Application	arduous conditions, patrol	high intensity activity
	Basis of Issue	one pack	1 per 24 hr
	Shelf Life	36 mos	24 mos
	Storage Reqs	between 7°C and 24°C, dry, temp controlled	80°F (27°C), none
	Nutrition Composition		each
	a) Energy (kcal)	each	380 kcal (1591 kJ)
	b) Protein (g)	1475 kcal (6176 kJ)	4
	c) Carbohydrate (g)	33	75
	d) Fat (g)	225	9
	e) Sodium (mg)	49	215
	f) Iron (mg)	1622	0.9
	g) Calcium (mg)	8	40
	h) Other (optional)		
	actual % Fat	30%	21%
	actual % CHO	61%	79%
	actual % Protein	9%	4%
	Totals	100%	104%

**Table E-8: RTG-154 NATO/PfP Supplement: Functional/Operational Assessment**

1	Country	Canada (CAN)	United States (USA)
3	<b>Supplement Name</b>	<b>Light Meal Combat Pack (LMC)</b>	<b>Food Packet, CHO Supplement (CarboPack)</b>
10	<b>Water Requirements</b>	670 ml	24 oz (710ml) H2O
11	<b>Packaging</b>	flexible laminated pouch	items pkg in foil lam & assembled in food packet; bev pwds in drink pouches
12	<b>Shipping Container Data</b>		
	a) Dimensions/ cube	dimension: 26 cm wide x 43 cm long x 47.5 cm high. Cube: 53,105 cm <sup>3</sup> /cc or 0.053 m cu	case dim: 15.75" L x 9.75" W x 6.25" D; cube: 0.6 cu ft/case; (16990 cm <sup>3</sup> ); 60 cases per pallet
	b) Weight	10 kg/case, the average total weight of one LMC is 373 gr.	10.15 lbs/case (4.6 kg)
	c) Quantity or yield per case	24 pack per case	25 carbopacks/case
13	<b>Additional Data</b>		
14	<b>Comments</b>	there is no food preparation required only the reconstitution of the beverages beverage mixing bags are provided	procured via special order; easy to prepare & consume; 2 bev flavors/packet



**Table E-9: RTG-154 NATO/PfP Supplement: Components**

1	Country	Canada (CAN)	United States (USA)
3	Supplement Name	<b>Light Meal Combat Pack (LMC)</b>	<b>Food Packet, CHO Supplement (CarboPack)</b>
	<b>Supplement Content</b>		
	Food components	<p>the pack contains a source of protein, dried fruit, pastry, granola bar, chocolate bar, candy roll and sport drink powder</p> <p>Menu #1</p> <p>Beef Jerky 50 gr</p> <p>Dried Raisins 40 gr</p> <p>Hot Chocolate 28 gr</p> <p>Lemon-lime Sports Drink 21 gr</p> <p>Chewy Chocolate Chip Granola Bar 26 gr</p> <p>Rice Krispies Square 37 gr</p> <p>Mars Chocolate Bar 58 gr</p> <p>Life Savers Assorted Fruit Roll 32 gr</p> <p>Menu #2</p> <p>Pepperoni 50 gr</p> <p>Strawberry Flavour Dried Cranberries 40 gr</p> <p>Hot Chocolate 28 gr</p> <p>Orange-pineapple Sports Drink 21 gr</p> <p>Bumble Berry Chewy Granola Bar 26 gr</p> <p>Muffin Bar - Brownies 38 gr</p> <p>Malted Milk Chocolate Bar 48 gr</p> <p>Caramel Candy Roll 50 gr</p> <p>Menu #3</p>	<p>the contents of each food packet shall be two pouches of beverage powder and one bar; all bar types/flavors shall be procured in equal quantities and assembled in a uniform distribution; all beverage flavors shall be procured in equal quantities and assembled in a uniform distribution; each food packet shall contain two different beverage flavors</p> <p>2 12-ounce beverages (powdered carbohydrate CHO electrolyte beverage base)</p> <p>Flavor I Fruit Punch</p> <p>Flavor II Grape</p> <p>Flavor III Lemon</p> <p>Lime</p> <p>Flavor IV Orange</p> <p>1 carbohydrate rich energy bar (various flavors)</p>

Teriyaki Beef Jerky 50  
gr

Dried Pineapple and  
Papaya 40 gr

Hot Chocolate 28 gr

Ice Sports Drink 21 gr

S'Mores Chewy

Granola Bar 26 gr

Muffin Bar - Carrot &

Orange Zest 38 gr

Mirage Chocolate Bar  
41 gr

Life Savers Pep-O-  
Mint Roll 24 gr

## **Data Collection Notes/Acronyms**

### **Notes:**

1. Areas highlighted are calculations to derive approximate percent basis of fat, carbohydrate and protein for each ration or supplement.
2. Some responses and data input may be truncated or abbreviated in order to conduct desk top analysis of ration and supplement assets.
3. Full data input resides on asset identification sheets or other directed input.

### **Acronyms/Abbreviations:**

AR - Army Regulation

ASAP - As Soon As Possible

C - celsius

cc - cubic centimeters

CHO - carbohydrate

cm - centimeters

d - dimensions

dm - decimeter

ea - each

F - fahrenheit

FRH - Flameless Ration Heater

g - grams

GMO - Genetically Modified Organisms

gp - general purpose

hgt - height

hr - hour

in - inches

ISO - International Standards Organization

kcal - kilocalories

kg - kilograms

kJ - kilojoules

l - liters

lbs - pounds

mos - months

NSOR - USA Nutritional Standards for Operational Rations as identified in Army Regulation AR40-25/ BUMEDINST 10110.6/ AFI 44-141

pkg - packaging

qty - quantity

rh - relative humidity

TTI - Time Temperature Indicator

w/o - without

yr - year

<= - less than or equal to; not to exceed

# - number



## ANNEX 6: COMMENTS FROM OPEN QUESTIONS', ALL NATIONS.

### German rations.

#### **Here you can comment on whether you think the German rations are better or worse than the Norwegian field rations?**

Not enough food for lunch and dinner. Should contain a list of nutrient. + nice with bread for breakfast. Positive with good variety of lunch and dinner.

---

Higher amount of garbage due to several items not used., less food in the main meals, and not as convenient to prepare as the Norwegian field rations.

---

more difficult to prepare. Ok in a tent, if you have the "modder" multi-fuel, but more difficult in a vehicle, or without a multi-fuel.

---

To much trash from the packages. Not enough food for dinner / lunch.

---

There are too much useless / distasteful articles that only produce garbage. Eg 1000 bags of sugar. The packages are made of cardboard, which dissolves when it gets wet. Not enough food in the daily rations. Breakfast is almost non-existent. Same breakfast regardless of menu. It does not taste good.

---

The packaging is hopeless. ( too much rubbish, and not water resistant). Not enough food. Distasteful bread. Poor. Some dinner meals had both good taste and consistency, others did not taste much, however, 300gram are not enough. To much "junk" ( huge quantities of tea, coffee, sugar, salt, energy drinks etc ).

---

Creates extremely amount of trash. Some of the meals tasted sour. In general it is difficult to determine what it is that you eat.

---

The German field rations have too little food, and several unnecessary things like sugar and salt in separate packages, which only creates a lot of garbage.

---

It was only two meals that was worth eating, lunch and dinner. The breakfast meal should be more equal to lunch and dinner and it should be possible to heat it up in the same package. A lot of packet of pure sugar were thrown away when opening the meal packages.

---

Believe that they are not as well suited.. There is more trash, and it is harder for us in the vehicles to prepare the food. The food tasted ok. Minus for inadequate labelling of nutrient content (energy, calories, etc.)

---

Poorer = not enough food, not feeling saturated.

---

nice variety and good food, however too little food for Norwegian conditions. Lacked a nutrition guide that should have been present.

---

Dinner was a little more tasty than the Norwegian, but hopeless to prepare in the wagon. It is not enough food for dinner. Children's menu. Bread was a good thing.

---

The food is "fresh". No other country operates with powder food, regardless of nutritional content.

---

**German rations - most liked**

Ravioli of mushroom

---

Pasta mit ravioli

---

Ravioli, panned rice

---

the meals that contain rice

---

ravioli with mushroom

---

Dinner and lunch because those were the only tasteful meals.

---

Ravioli, dinner / lunch, chili, dinner / lunch Hartkeks

---

South American vegetable chili

---

Indian dinner and pasta with championgstu tasted good.

---

lunch and dinner were pretty much the only thing I ate

---

Dinners and Lunch, juicemix of both types

---

The Indian meal

---

Ravioli.

---

Rye bread was brilliant. I have never had so well balanced stomach in the field before !  
Matches, sugar, salt GOOD!

---

Dinner, rice and meat

---

the pork stuff with rye bread.

**German rations - Least accepted**

South American chili casserole

---

coffee extrakt. Why not use real coffee? It is just as easy

---

Two hamburgers with tomato sauce

---

bread, spreads

---

bread

---

The bread that looked and tasted like cork board

---

Bread, Gesp\_something.. with fruit, exotic drink.

---

rye bread

---

fruit salad, stew, liver pate, plum jam and apricot jam.

---

stew dinner / lunch

---

Fruit salad

---

Hamburger with tomato sauce

---

Tea extrakt. "Bajs" in the bag.

---

No particular comment

---

semolina pudding

## **Slovenian rations**

### **Here you can comment on whether you think the Slovenian rations are better or worse than the Norwegian field rations?**

The food had more flavour, and tasted better. Some nice salt biscuits, and a plus for dessert,

---

Making dinner is easier when it does not have to contain boiling water. Freeze-dried foods often provide a "brick-belly" .. I did not experience this from the slovanian food.

---

The food tasted and looked better than the Norwegian. The meals could have been larger, but less of the other stuff. Chocolate, desserts and biscuits were good and could remain in the packages, but there is too much other things that are thrown away. The Norwegian and Slovenian field rations are similar in content, and there is too much junk food that get thrown. When you get the chance to eat, you choose to eat dinner, and you rarely have time to eat the rest of the content.

---

Practical cooking, good taste.

---

More flavor and the pasta is good food for warriors . Keeps me going. There was not enough food in the rations.

---

was little food in the bags, early expiration date.

---

### **Slovenian rations - most liked?**

Pasta with olives and pasta porcini. Chocolate mousse and a cup of coffee was absolutely lovely. Biscuits was very good..

---

Chicken casserole, and all of the pasta dishes, as well as the chocolate mousse and the chocolate mussili.

---

Chicken casserole

---

almost everyone of the pasta dishes were very good, except the one that contained olive that was ok. The chicken meal was good, but did not always become hot enough. The breakfast does not taste so good with milk, so therefore I often eat dinner or lunch instead.

---

Pasta Bolognese

---

Instant Tea

---

Porcini pasta

---

Pasta dishes.



---

veg.sausage and black pepper, contained alot of food.

---

**Slovenian rations – Least accepted**

Mackerel,

---

energy bar, and the sausage dinner. vegetar sausage is not real meat.

---

Chocolate dessert

---

pasta with olives. I love olives, but this ...

---

tuna

---

All of the canned food

---

The coffee and tuna stuff was bad.

---

energy bar.

---

## French rations

### Here you can comment on weather you think the French rations are better or worse than the Norwegian field rations?

Poor packaging, impossible to prepare in the dark when there are regulations for use of light- boring taste, ridiculous cheese and candy, dry biscuits that tasted like sand, except for the chocolate biscuits. I believe the entire rations were poor, except for the major toffees, the sardines and the meat with carrots, and the lasagne.

---

There are not enough food in the meals. Lunch 300g, dinner 300g. there are to little calories in the food, especially during winter exercises. The rations provided a lot of garbage, and they needed a lot of space. At the positive side, the food was very tasty, and you can actually chew it, which is something that you miss when eating the Norwegian rations that only contains soup. I lost 3 kg during the exercise.

---

Hard to prepare in combat room and in vehicles. This is necessary for a Mek-Inf Company. The food tasted good, but it was too little, it was only crackers and cheese for breakfast, this was far too little. An entire days ration would do for one meal.

---

Much waste. Lunch can not be prepared in the combat room at CV90 due to esbitbrenner. This makes the fook impossible to eat, due to the fact that soldiers might be in the combat rooms for 24 hours at a time.. All dishes include liquid fat, that make the dishes look unappealing and give a bad taste.

---

We saw immediately that there was to little food in one day ration. Besides the two dinner dishes that were can food, it was usually canned cheese and crackers and some kind of "appetiser" in box form, either pâté, anchovies or other terrible things. In some of the menus was a cheese that had over 50% Cambert, which was really bad. Dinner dishes should be heated, and the ration contained an Espirit burner. This was very inconvenient, especially since we are staying in wagons most of the day and not able to light up and heat up food, so we mostly ate the food unheated. I imagine that this food is extremely difficult to heat up during the winter, since it freezes, and you're sitting there desperate to try to thaw it over the poor Espirit flame. There was also a lot of garbage in this FR'n, it came in a large cardboard box, and there was a lot of rubbish since most were packed hermetically and there was one epirit burner in every day rations, which also made a lot of unnecessary garbage. chocolate that was in the packages was not tasty, along with some candy that looked like cake decoration. One thing that was actually tasty was the dinner dish with lasagna. When heated with the multifuel it tasted almost like real lasagne. "Milky dessert" was also a winner, a kind of caramel pudding that was good, but unfortunately was in few of the menus.

---

It is impossible to get hot food in combatroom, in the French ration there is too little food, and too little nutrition for days / exercises with a high activity level. Canned food is a good concept, but it works fucking bad when you sit on the wagon for 12 hours straight.

---

It was pretty special to receive canned food. The food tasted good at times. Something was very well cold, while others were less tasty. It can be inconvenient at times, when you have to use an esbit burner to heat the food.

---

Too little food and energy, we ate pretty much everything that was in ration, but was still hungry. Some of the biscuits was awfully dry and quite discouraging, but those of oats and chocolate were good with the cheese. The way they were cooked over an esbit burner, was a bad tactical solution (takes a long time, much light and heat), and a bad fit for eg. mechanized units that are often on the vehicle and travel far and fast. The advantage of the Norwegian FR is that it can be prepared in the combat room on the CV90 during the march. Unlike the Norwegian FR, the French ration can be eaten cold, but is not a good solution because we always strive to get hot food, and it tasted awful when served cold. Most of the dishes were tasty, but it was all too little of it, and biscuits for breakfast is something I would never experience again.

---

Too much garbage with tin cans. Had to prepare the food outdoors, due to the esprit burner, and this is difficult to do under light and sound regulations (visible flame)

---

The food from the French rations tasted worse (!) Than Norwegian, even though Norwegian rations is sickening. But they are much more practical because the content is varied and more exciting. Preparing of French FR, is impractical due to the fact that the infaterister often sit in vehicles, and unable to heat rations with an open flame. The contents of the lunch and dinner, is too small in French FR to meet the daily needs. But it helps with the large portion crackers, cheese, fruit, nougat and liver pate.

---

There is too little food, the package is too large, impractical to prepare more waste.

---

It is not enough food! To little nutrition. Combat Disabled sooner

---

French Fri so not good, there was a lot of trash, content of nutrition were not listed on the box and I was not satisfied.

---

Esbit burner is impractical to use. Odor / gasses from the flame was not very nice, tendency to headache occurred. Biscuits for breakfast with a poor range of orders was not well received. Good meals were such as: lasagna and a Bœuf des Carrott (?)

---

First, the waste and the ration takes up more space than the Norwegian FR'n do, and second, the Norwegian FR'n gives more energy than what the French did!

---

### **French rations – Best liked**

Macaroni and sausage Fromage fondue

---

meat and carrots, as well as the lasagne after having tasted the various dishes hot and cold, I gave a damn about trying to heat them, because of light discipline, do not think they tasted so much better heat anyway.

---

lasagna

---

Lunch / Dinner

---

The one with the beans

---

Lasagna with beef! Easy!

---

esbitt burner was nice when it was time to heat food

---

Hard to remember, but the lasagna was good, plus them with sausages and beef

---

Lasagna

---

Menu No. 9 and caramel bars.

---

Carramell guff in canned food.

---

Lasagna

---

caramel bars

### **French rations – Least accepted**

Various fruit bars

---

the sour cheese and biscuits, and I'm generally fond of both

---

soft cheese had an unusual flavor to fish patee

---

Breakfast

---

Liked no one of the ones I tasted

---

avr either anchovies or sardines in a box, completely hellish

---

the overall packaging was impractical

---

received very little varying menus, but ate the ones I got

---

Generally most of them

---

Menu No. 12, and chocolate.

---

Don't see the logic about the snack food, had to constantly munch on biscuits to achieve a certain kind of fullness

---

Fruit bar, the white type

---

## Great Britain

### Here you can comment on weather you think the british rations are better or worse than the Norwegian field rations?

The British rations reminds me more about food than the Norwegian. people survive fine on both, but I'm not a fan of the dry frozen variant, it tastes in my opinion not like food!. When what you get served, looks, smells and tastes like food, it makes you feel like eating. The British are easier to pack, takes up less space than the Norwegian. We might have a challenge getting warm rations. It is as much waste as the Norwegian. I want to comment on an earlier questions. If one has eaten up all the rations. one must remember that the rations have a very high calorie content and the energy level does not always demand these amounts of food..

---

This looks and tastes like food

---

In hot climates, it will be better to prepare because don't have to do anything with it, you can eat it straight from the package. In cold weather, for soldiers in the field, it will be difficult to use because the contents will freeze, and then you're completely dependent of warm water and plenty of time to a thawing process. So the English ration will be very useful for example in Afghanistan, but little useful in Norway during the winter.

---

The British are not dependent on the hot / cold water to be eaten. In addition there is a high degree of variety on the menus and to how they are packed in boxes

---

Impractical cooking, and poor package to eat from.

---

A good consistency for most of the food. Welcoming and appetizing. Good taste. Varied content. Handy zip bag for storage / packing of food including small components. Impractical that it needs to be heated in a kettle. A lot of rubbish!

---

It was too much beans in rations, and too many of the menus had tuna as an ingredient in the meal. There was a lot of unnecessary packaging. Closeable bag was really smart. Never felt that a single meal provided enough food to feel full.

---

No need for water to prepare English. When it's hot , like 45degrees celcius and the air is dry, the Norwegian tech-bag are very wellsuited. The disadvantage of the British is that it can not withstand frost. Another advantage was that in the same package there were 20 different variations of the ration. When you eat the Norwegian it is often the same meals you eat for several weeks.

---

There is more flavor. But perhaps a bit too spicy. One could believe that Tabasko was to soften the taste (!) The way they were made to be prepare does not fit for field conditions

---

Easier to prepare without water. A lot of junk ... Plastic bag + +

---

It was okay. A large selection of menus is probably the most important. Variety is important. A little unusual to prepare but it went smoothly.

---

Variety of dishes was good in the UK. Will quickly get tired of the Norwegian rations due to insufficient variation. The department could be better in ordering mixed packages.

---

Worse. Too much garbage, hard to prepare, too much chicken and tuna. Good taste when you get to the final layer. Should in this case contain the same elements as in the U.S. to warm up.

---

Good that it was not necessary to add water in all the dishes. Seemed that dinner portions were small, were not properly fed. It was good thing that it contained fruit (pineapple, peach), as dessert in the ration. Also good that it contained: spoon, matches, and plastic bag to have your food in when you took it out of the box

---

### **British rations - Most liked**

Has no favorite. All tasted good –

---

Has no particular favorite. I think it mostly tastes good.

---

I liked the noon dishes best, mostly because they were delicious to look at, that there was great variety and they were very good in taste.

---

Mexican Tuna

---

The fruit puree, meal "chewing consistency" (ie, omelets, meat and rice) and energy bars

---

What I liked best was the variety. I liked No 20 Especially well

---

Chunky chicken chili

---

Omlet, Bacon and Beans .....

---

Happen

---

no special

---

Mexican Tuna Pasta. Yum! : D

---

### **British rations - Least accepted**

Energy bars are a poor product in the Norwegian. Tastes chipboard

---

I do not remember now

---

Oat bisquit

---

Eating tuna and beans (too much beans)

No opinion.

---

Pudding

---

Chicken Curry and Tikka Masala

---

All trash

---

no special

---

Oat biscuit

---

Rations of tuna

---

NB! Note that those who respond late, remember the poor ..

## USA

### **Here you may want to comment on why you think they are better or worse than the Norwegian field rations**

The positive side is that the rations are varied and that the content varies quite a bit from ration to ration according to the Norwegian, that contain much of the same This is especially nice if you have to eat field rations over some time. There are very few soldiers in TMBN that have been involved in the defense a few years, that are living primarily on field rations while on mission, that live entirely on field rations, simply because they are tired from eating dry-teck. This is the main reason that it is disposed so much food, and that it comes in so much food after missions that are not eaten. Something I and many with me miss in Norwegian rations versus American is more candy other than honningkamfer. it's really important because it provides higher moral. The ability to prepare hot food without having hot water is also very good. Drytec except breakfasts are completely inedible without hot water because it freeze-dried content will not loosen up in the water. This is very good when you are on a mission and don't have access to warm water, making it possible for people to have a hot meal which can raise the combat endurance significantly. What I experienced as negative by the american ration was the composition of nutrients. Rations take most of the energy in the form of sugar and fat. They contain little protein and fiber, which for me caused a lot of variation in the glucose level , that again caused bad ability to stay concentrated. Ration gave a nice feeling of fullness, but I soon became hungry again although the number of calories consumed would suggest otherwise.

---

The food tastes better, .more varaiety, .more tasty things in the package

---

The main meal tastes increasingly worse than the Norwegian ration, while all others are generally better than the Norwegian.

---

Better selection, more to choose from in the different rations.

---

tastes better, more variety, easier to prepare.

---

They taste not good and there is great variation. The Norwegian tastes terrible and you throw more than half of the ration.

---

Better: You eat everything, tastes better, more variety, more parts that you can save throughout the day if they have received little food. Worse: You get faster filling of Norwegian FR, one may go further on less FR, an MRE meal takes a lot of space and creates a lot of garbage.

---

Tastes so much better.

---

are better because it is easier to prepare, takes less time to prepare than Norwegian! simply better food!

---

Rations isin my opinion better when not everything is dry-tech. I've now been in the military for five years and can say that I, as long as possible, never eat Norwegian field



ration. I tend generally to bring my own food. Like polar bread, sausages, tuna and various fjordland. U.S. reminded more of the combination of the above. food rations to the usa are also boring in time, but it is significantly longer time before reaching saturation point. has also been involved in "open eat" which I think is an extremely well supplement to dry-tech

---

That is the ready to eat, heat their bags, save time on heating, release a heat source

---

what benefits the American rations is: They are packed in box with various menus. The way food is prepared . The consistency of the food (taste of fresh food) The content, meaning not only the food but also snacks that can be eaten during march .and it contains spoon. Do not overdo packing of the ration (lots of garbage). Menu choices are not made for Norwegians, very much spicy food. Create either a developed version of "open and eat". Norwegian food that most people like. Do not underestimate the Norwegian food, the most important thing is that you get food that looks like food that tastes like food.

---

### **American rations – most liked**

MREEn Thus, the meal that could be heated and dirty shaken, a lot of calories that tasted good without taking much time to prepare. Candy like skittels and m & m's was a welcome touch.

---

beef of all kinds

---

Sloppy Joe, Veggie Burger, Apple Cider, Leamon Tea Pound Cake, Brownie, Tabasco, M & M

---

Sloppy Joe ...

---

Sloppy joe Veggie Burger

---

Sloppy Joe! Chicken Noodles M & M's Skittles Tabasco

---

Beef Stew, Sloppy Joe

---

Meatloaf with gravy with mashed potatos

---

various chicken and pasta dishes

---

chiken with noodels, strawberry dairy shake

---

part of the juice bags were extremely good. sloppy joe was just one of rations I can remember that I liked and most of the pasta dishes were above average. jalapeno cheddar, was also popular

---

All the strong rights

---

**American rations- Least accepted**

clam chowder

---

clam chowder

---

Clam Chowder

---

Vegies omelette: (

---

veggie omelette

---

Clam chowder

---

Veggie Omelette

---

clam chowder

---

Tuna and vegetables omelette me

---

clam soup or whatever it was called:) not good at all

---

Anything with vegetarian

---

## Canada

### **Here you may want to comment on why you think they are better or worse than the Norwegian field rations**

They are worse since they are more difficult to prepare. Even with microwave, one needed a dish as well. Much additional and extra garbage.

---

Harder to prepare than the Norwegian, and in particular in relation to its U.S., while it takes too much space

---

Dessert. Sweet ending to your meal, with fruit, creates a great atmosphere. Can also be used as emergency rations to have in the GRU.

---

The convenience of the foreign food was that it sustained "all parts" of food. In the Canadian FR'en there were pieces of meat, making food more "food" and not just a field ration. The small drink mixers were also practical and smart to mix the juice with.

---

no

---

-

---

Cooking is more cock than the Norwegian. Need to cook the entire bag in the Canadian ration, and it uses more water.

---

It requires more preparation and time to eat the ration than Norwegian FR. So I think it suits lesser for more operative positions.. Suitable for staff.

---

was more difficult to prepare than Norwegian field ration. a lot more unnecessary waste in each unit than the Norwegian

---

Difficult to prepare if you do not have access to the boiling pot

---

I was pleasantly surprised by the Canadian rations. They had good flavor and a better variety. They seemed more fresh than the Norwegian. The downside was the preparation and the amount of waste

---

A lot of various small things that are unnecessary. Tasteless food. Cheddar cheese was too strong in taste. Mac & Cheese should not be possible to do so badly. Norwegian rations have just what you need and not much more items that takes up space. The box was too big for just one meal (compared with the Norwegian who holds more)

---

generates a lot of garbage. you have to eat everything to be full, which takes a long time Unlike the norwegian where you do not need to eat everything, you get tired of just eating dry tech'en. Preparing is impractical. And it tastes bad.

---

Dessert at every meal. One can take the desserts in the GRU as emergency food without the need for preparations. It looked like food, ie there were pieces of meat and fish pieces

in the food. Problem with the preparations in water jars.

---

Looked better, more food, better taste. The only negative is the packaging.

**Canadian rations – most liked**

Can not remember anymore (wrote the last time I attempted to answer) Chicken Right

---

Baked beans and tortillas

---

The dessert was a winner. Good ending of the meal, and works well as a snack or quick breakfast, if one was busy.

---

Hard to choose just one favorite, as I have varying tastes and desire that varies day by day. But much of the food was good.

---

Mostly the same

---

Beef Macaroni Beef Tortellini

---

Do not remember

---

Bread.

Anything with eggs and chicken in. Had a sponge-like consistency, but was good in taste.

---

kit kat chocolate, chocolate drink

Do not remember

Do not remember

Pasta

**Canadian rations - Least accepted**

Do not remember

---

Fishing dishes

---

All food that contained cheese (cheese) not a good taste for me. Terrible smell and taste.

---

anything with cheese

---

macaroni with cheese

---

Baked Beans

---

Do not remember

---

all with cheddar cheese in.

---

indian chicken breast

---

## **Norway**

### **Norway - Most liked**

Crackers with tuna

Pasta Provence Biscuits with liver pate

---

Pasta

---

chicken in herb sauce

---

Stew and beef stew is good dishes. But unfortunately very rare. Pasta bolgonese, and chicken curry comes at a good second place, and these are often available.

---

Pasta nests.

### **Norway - Least accepted**

Royal Thai, and breakfast in general

---

Royal Thai

---

Royal Thai

---

Royal Thai, sweet and sour chicken, all breakfast, rice basil, pasta in tomato sauce, pasta with cheese sauce, pasta provence.

---

Honningkamfer, fish dishes

---

## ANNEX 7: REQUEST FOR SLOVENIAN RATIONS



### NORWEGIAN ARMED FORCES

Norwegian defence logistical organisation

1 av 2

<b>Action officer</b> COM STENBERG PÅL HARALD, pastenberg@mil.no +47 67 40 36 41, 0515 3641 SYSTEMSTYRING/ SOLDAT- OG B/ BASESYSTEMER/ Basematr, PO	<b>Our date</b> 2009-06-18	<b>Our reference</b> 2009/021935-001/DEFNON/ 519
	<b>Previous date</b>	<b>Previous reference</b>

<b>To</b>	<b>Copy to</b>
Republic of Slovenia Ministry of Defence Directorate of Logistics, Basic Acquisition and Equipping Agency Dimiceva ulica 15 1000 Ljubljana Slovenia	

## Request for Slovenian field rations for Norwegian exercise

### 1 Background

The Republic of Slovenia, Norway and ten other NATO or PFP nations have been participating in NATO RTG 154. This is due to the purpose of a possible future deployment of a Nato Reaction Force (NRF). The participant from The Republic of Slovenia is nutritionist Larisa Pograjc. One question is whether a multinational NRF can operate during different climate zones provided by the rations of only one nation. NATO RTG 154 will provide a final report, which is in its final stage. However, the reports after work and updating will benefit from any field study in this matter.

### 2 Discussion

Norwegian Defense Logistics Organization (NDLO) will provide a field study that will cover issues like interoperability and acceptability among our soldiers, while they are provided by foreign nation's field rations. NDLO will provide a multinational field ration study in Norway, from September 30<sup>th</sup> to October 7<sup>th</sup> this year. Norwegian soldiers will test different nation's rations during a typical NRF mission (exercise). Several RTG 154 members have already confirmed that their country will provide their rations for this purpose. NDLO will for this study need the amount of 500 units of 24 hours general purpose field rations. NDLO will be able to exchange the same amount of rations if requested.

### 3 Conclusion

Due to the work of Nato RTG 154, Norwegian Defense Logistics Organization hopes that Republic of Slovenia will provide this study with 500 units of 24 hours field rations.

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Practicalities about this can be discussed by COM STENBERG PÅL HARALD, [pastenberg@mil.no](mailto:pastenberg@mil.no), phone: +47 67403641/+47 99093617. Due to vacation period in July and delivery time to Norway, NDLO hope that decision about this can be made before 30<sup>th</sup> June.

By authority



SYVERSEN RUNE INGE  
Colonel



# ANNEX 8: VETERINARIAN APPROVAL REGARDING IMPORT OF FIELD RATIONS FROM USA

Forsvarets logistikkorganisasjon  
V/ Pål Stenberg

Deres ref:  
Vår ref: 2009/146191  
Dato: 23.10.2009  
Org.nr: 985 399 077

Statens tilsyn for planter, fisk, dyr og næringsmidler

Mattilsynet

## TILLATELSE TIL Å IMPORTERE FELTRASJONER FRA USA TIL BRUK VED STUDIE I DET NORSKE FORSVAR

### Bakgrunn for søknaden

Forsvarets logistikkorganisasjon (FLO) vil gjennomføre en feltstudie, der norske soldaters aksept for allierte feltrasjoner skal måles. Studiet skal måle soldaters inntak av ulike rasjoner i en feltøvelse over to uker.

Rasjonene inneholder ulike typer animalske produkter med opprinnelse i USA. Disse er prosessert i autoklav og pakket som mykhermetikk.

Det opplyses at alt avfall blir samlet inn i forbindelse med veiinger, for så å bli destruert. Uåpnede rasjoner blir returnert til tollager og sendt ut av landet.

Det søkes om tillatelse til å importere ca 250 (24 timers feltrasjoner).

### Vedtak

Med hjemmel i "Forskrift om tilsyn og kontroll ved import og transitt mv av animalske næringsmidler og produkter av animalsk opprinnelse mv fra tredjeland" § 2, 3. og 4. ledd, gir Grenseveterinæren ved Oslo Lufthavn, Forsvarets logistikkorganisasjon (FLO), herved tillatelse til å importere ca 250 (24 timers feltrasjoner) bestående av animalske produkter fra USA.

Produktet skal brukes i militære feltstudier og er uten kommersiell verdi.

Betingelse for godkjenningen er at produktene ikke frambys, og at produktene destrueres etter bruk, som beskrevet i søknaden.

Mattilsynet  
801021 - Seksjon for primærproduksjon  
inkludert kjøttkontroll

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Med hilsen



Marit Forbord  
Grenseveterinær/seniorinspektør



Karin Eriksen  
Grenseveterinær/seniorinspektør



ANNEX 9: INFORMATION LETTER ADDRESSED TO TELEMAR  
K BATTALION

## Systemstyring

### Notat

1 av 2

#### Vår saksbehandler

OK STENBERG PÅL HARALD, pastenberg@mil.no  
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SYSTEMSTYRING/ SOLDAT- OG B/ BASESYSTEMER/  
Basematr, PO

#### Vår dato

2009-10-16

#### Vår referanse

2009/ /FORSVARET

#### Tidligere dato

#### Tidligere referanse

Til

Kopi til

## Undersøkelse av feltrasjoner fra allierte uke 47 og 48

### 1 Bakgrunn

Et ernæringspanel i Nato, RTG 154, ble dannet i 2006. Dette ut fra et NATO-ønske om å kunne tilby en type feltrasjon til en multinasjonal NRF-styrke. RTGs respektive lands feltrasjoner ble kartlagt og analysert ut fra ernæring, atferds og interoperabilitet. Ut fra rapporten og gruppen syn, er det knyttet stor usikkerhet til hvorvidt allierte soldater kan la seg forpleie på et lands rasjoner.

### 2 Drøfting

Undertegnede holder på med masterstudie i ernæring ved Høgskolen i Akershus. Som deltaker i ovennevnte fora, sa jeg meg villig til gjennom masteroppgaven, å finne ut hvorvidt norske soldater kan akseptere utenlandske rasjoner. Dette for å gi de allierte et innblikk i deres rasjoners egnethet i NRF-opdrag.

#### Studiens mål

1. Måle akseptansenivå i smak på utenlands FR tilbudt norske soldater
2. Finne ut eventuelt hvilke rasjoner og eller komponenter som egner seg best for norske soldater. Dette med tanke på fremtidens feltrasjon.
3. Finne øvrige interoperabilitetsfaktorer, som kan påvirker norske soldaters måte å øve på. Herunder vekt, størrelse etterforsyningshensyn og tilberedning.

#### Rammer for undersøkelsen:

Vi mottar ca 240-260 rasjoner fra hver av landene BEL,USA,CAN,TYS,SLV, ENG. Disse inneholder alt fra 3200 kcal til drøye 4200 kcal, avhengig av nasjon. Alle er av en ernæringsmessig tilfredsstillende kvalitet, slik NATO ser det.

Optimal størrelse på en tropp eller gruppe vil være 24 soldater, som inntar et lands rasjoner i 10 dager. 30 soldater i 8 døgn er også et alternativ. Mindre enn 8 døgn er ikke ønskelig. Alt over 20 soldater som inntar samme lands rasjoner utover 7 dager er akseptabelt.

Annen forpleining er ikke ønskelig under øvelsen

Alle soldater, her respondenter, vil etter øvelsen blir forespurt å svare på et spørreskjema. Dette vil bli tilgjengelig elektronisk (e-post). Respondentene vil bli anonymisert gjennom dette systemet, og svar vil ikke kunne spores tilbake til den enkelte. Det er for undersøkelsen, men også for Forsvaret, viktig at alle besvarer spørsmålene, da en best oppnår gode forskningsdata.

→ Premie vil bli trukket ut blant respondentene

Det er ønskelig med støtte ifm innsamling av FR-avfall, da dette må veies/kvantifiseres på en eller annen måte. I forbindelse med innsamling av avfall hver annen dag, er det ønskelig at avfallet samles pr tropp/gruppe, da dette vil bli veid. På grunn av veterinærregelverk hva angår mat fra utenom EU, vil all mat og matavfall bli samlet inn. Dette vil etter veiing bli destruert.

Informasjon med mulighet for spørsmål, vil bli tilgjengeliggjort før øvelsen. Jeg er vil også være dels tilgjengelig under øvelsen.

### **3 Konklusjon**

Med ønske om en god øvelse med mat fra andre land enn det som vanligvis inntas under øvelse.



Pål Harald Stenberg (ef)  
Orlogskaptein  
Prosjektleder