

Chapter 3

OUTDOOR COOKING

During a strenuous hiking or climbing trip one burns an enormous amount of energy. You should therefore try to ensure that each member of the group eats enough of the right food each day.

But what is 'the right food'? Briefly, it is food which is both tasty and has a high energy value. It should be tasty, because the physical demands of a strenuous hike or climb often results in a depressed appetite, particularly at altitude. It should have a high energy value to allow you to meet the physical demands of the hike and because in cold weather eating sufficient high-energy food is essential to prevent hypothermia. Ensuring that meals are appetising and enjoyable is therefore no mere luxury but a way of helping your party to cope with any situation.

In the case of adult parties, the group leader often delegates the responsibility for cooking arrangements to one or more members of the group. You should nevertheless discuss cooking arrangements with whoever has been delegated to organise the food, since you will have to share the responsibility if your party ends up during the hike with food which is unsuitable or too little.

Planning

Plan cooking teams

A group consisting of only four or five people seldom needs to be split up into cooking teams. Larger groups, however, are best divided into cooking teams of two to five people per team. Instead of each person having to carry a stove and fuel, this duty can then be shared by the members of a cooking team. Individual dishes cook much faster when their volume is not too large: having small teams therefore also saves fuel.

A further advantage of the team approach is that food is seldom packed in individual servings, but rather in packets or tins sufficient for three or four people. The number and type of stove carried should be considered, and each team should calculate how much fuel it is likely to need for the particular stove it plans to use.

On the rare occasions when individual tastes are so divergent that it becomes a problem to cater for a group, breakfast and lunch can be left to each person to cater for himself. Only supper, which usually requires that stoves and cooking utensils be pooled, is then a group effort.

Plan the menu

Important general principles of menu planning are:

- Meals should be varied, with a high nutritional value.
- The nature of the menu should be determined by the type of excursion. If you intend to walk far each day, weight becomes an important consideration. Avoid tins and other heavy items. Select food with a short preparation time, since longer cooking times require you to carry more fuel.

- Every person should carry a small emergency food supply.
- Write down your menu. This helps you to determine the quantities required and to ensure that you have not forgotten anything.
- Ensure that you have enough utensils, Billies and a stove for the planned meals.

Composition of the hiking meal

Food is the fuel which the body burns (oxidises) to provide heat or energy. The energy released by food is measured in joules, with 1 000 joules making one kilojoule. (Before metrication, food energy was measured in Calories — an incorrect use of the term kilocalorie, or 1 000 calories. One kilocalorie equals 4,2 kilojoules.)

The body at rest requires energy just to maintain vital body functions. However, when you take part in a strenuous activity such as hiking, your energy requirements increase enormously. To meet the body's increased energy requirements you need to increase your energy intake. The hiking meal therefore makes a vital contribution to the health, enthusiasm, performance and morale of each member of the group.

The three basic food types required by the body for energy production are carbohydrates, fats and proteins. Although the body also needs minerals, vitamins, fibre and water, deficiencies of vitamins and minerals are unlikely to develop over the short period of the average hiking trip, and they are not considered further.

Of these three food types, carbohydrates are most rapidly and efficiently converted by the body into energy. If one ate only carbohydrates, however, one would have to eat at frequent, regular intervals. Proteins and fats, which are digested more slowly and which therefore make energy available to the body over a longer period, should therefore be added to the meal to ensure the sustained availability of energy for physical activity.

Carbohydrates

Carbohydrates provide energy (17 kilojoules per gram), but in a form so readily and quickly used up by the body that most nutritionists recommend that they should account for only approximately half the total caloric intake.

Carbohydrates include all celluloses, sugars and starches. In simple terms, carbohydrates are converted to glucose in the digestive tract, and the glucose is then absorbed into the bloodstream. Sugar has a simpler structure than the more complex carbohydrates such as starches and therefore reaches the bloodstream more rapidly. However, a sugary snack on an empty stomach may trigger an over-secretion of insulin, which in turn may result in a rapid drop in the blood sugar level and consequent impaired performance.

During exercise the glucose present in the bloodstream is used first. Once this has been depleted during prolonged exercise, the next preferred energy source used by the body is the glycogen stored in the liver and muscles. Glycogen is obtained almost exclusively from carbohydrates. Should the activity be kept up after the glycogen reserves have been depleted, the body starts to break down fat reserves and, eventually, muscle protein for energy. However, once all available glycogen reserves have been completely exhausted, exhaustion limits further activity. There is a proven relationship between the onset of fatigue and low levels of muscle glycogen. The higher the level of muscle glycogen when exercise begins, therefore, the longer a given activity can be continued before the onset of fatigue.

Fats

Fats produce the most kilojoules by weight (38 kilojoules per gram). Fats are therefore used mostly for energy. However, although fat contains more kilojoules by weight than carbohydrates, carbohydrates should still form the basis of the hiking diet because they are converted far more readily into energy.

Proteins

Proteins are essential building blocks of the body, and the body's protein requirement remains nearly constant, regardless of the level of activity. Protein should be included in more than one meal a day because the body cannot utilise its entire daily requirement at one meal.

Energy requirements

The amount of energy required by a mountaineer depends mainly on the following factors:

- The body mass of the person.
- The mass of the rucksack he is carrying.
- How efficiently he performs the activity.
- How much effort he expends performing the activity (the angle of the slope, the hiking speed, and the terrain all influence this factor).
- The duration of the activity.
- Environmental factors, including temperature, wind strength and rain.

Men			Women		
18 - 34	Moderately active	12 180	18 - 54	Moderately active	9 030
	Very active	14 070		Very active	10 500
35 - 64	Moderately active	11 550			
	Very active	14 070			
Boys			Girls		
7 - 8		8316	7 - 8		7980
12 - 14		11 088	12 - 14		8610
15 - 17		12096	15 - 17		9030

Recommended daily kilojoule intake

Other nutritional considerations

Dietary fibre has played an increasingly important role in the diets prescribed by doctors and researchers. A properly planned hiker's diet contains sufficient dried fruit, nuts, muesli or bran-type cereals and dehydrated vegetables to supply the body's fibre requirements.

The human body is about 80 per cent water. Since any drop in this figure leads to dehydration, an adequate intake of fluids is very important (see also Chapter 4, Hiking Skills).

The average hiking diet contains more than enough salt to replace the salt lost in sweat. Most processed foods, for example, are rich in salt. Salt tablets are not recommended: they can induce nausea and dizziness since they draw fluid into the intestines, placing a heavy load on the kidneys and

aggravating dehydration.

Regard alcohol with caution. Though rich in kilojoules, it is a potent diuretic which contributes to dehydration and the loss of vitamins and minerals from the body. There is also evidence to suggest that it has detrimental effects on muscle glycogen and blood glucose levels, lung functioning and temperature regulation. Never give alcohol to an injured person or to someone suffering from hypothermia.

Factors which could affect your hiking diet

A number of factors influence the choice of food for a hike:

- ***Likely energy requirements.*** This is the main, though not the only, consideration when planning your hiking menu.
- ***Weight.*** On every trip you are faced with the dilemma of wanting to eat as well as possible while carrying as little as possible. Avoid tins on a long or difficult hiking trip, since they are heavy and must be carried even when empty. Glass bottles are heavy and break easily. Also consider the weight of the rest of your equipment.
- ***Length of time perishable foods can be kept.*** The length of time which perishable food will last in your rucksack depends on the season, heat and humidity, the method of packaging, and how and where it is carried in your rucksack.
- ***Variety and tastiness.*** Variety is the spice of life; this also applies to the food you eat during a hiking or climbing trip. Everybody has worked hard and is tired, the last thing they want is a monotonous and tasteless meal. (For suggestions on light-weight and inexpensive ways of livening up meals, see Suggestions for main meals.)
- ***Ease of preparation and time required.*** The greater the time required to prepare food, the more fuel you need to carry; make use of the wide variety of tasty instant meals and dishes available nowadays. Complicated recipes requiring a lot of billies are not suitable for outdoors cooking. The boiling point of water drops by about 2°C for every 300 m above sea level: a dish which takes ten minutes to cook at the beach may take 20 minutes at 1 000 m and perhaps more than half an hour at 3 000 m. (Certain types of stoves (e.g. gas stoves) are also less efficient at high altitude or at very low ambient temperatures.)
- ***How filling is the food?*** Foods such as bread (particularly rye bread), pasta, muesli, rice, etc. are very filling and will meet your energy needs for at least a few hours. While it is possible to live on powdered energy drinks, they are not filling and leave you feeling hungry. Clearly, you need to strike a balance between saving on bulk and eating food which is sufficiently filling.
- ***The availability of water.*** There are a number of precautions you should take if the availability of water is going to pose a problem during the hike or climb: Avoid salty and spicy foods such as biltong, salami and curried foods. Remember that foods with a long cooking time usually require more water. Drink pure water instead of (powdered) cool drinks. Avoid alcohol. Avoid preparing meals that will leave you with a lot of dirty dishes — rather save your water for drinking.
- ***Sex and age of the group members.*** Women and older people need less food than men. The average adult woman requires approximately 25 per cent less food than the average adult man of the same age. From the age of about 25, energy requirements decrease. If

you are dealing with youth groups, bear in mind that growing boys will eat just about any amount of anything which is edible. Some people simply eat more than others: it therefore helps to get to know your cooking mates before a long trip.

- **Average temperature.** In cold weather the body needs more energy just to maintain body temperature. For cold weather conditions you might consider a diet with a higher fat content. Warm meals and drinks are especially welcome in winter. In cold weather soup is an excellent addition to your main meals. Even for lunch, soup or a hot drink such as drinking chocolate, tea or coffee might be considered.
- **Dietary restrictions and personal preferences.** Find out before the trip if there are people in the group who are allergic to particular foods or who do not eat certain foods. Rather than catering for people with finicky appetites, you can suggest to them that they should carry their own substitute foods.
- **Cost.** If you are on a fairly tight budget, you will have to forego freeze-dried foods, which are relatively expensive. Try to get most of your energy requirements from the complex carbohydrates such as pasta, bread, porridge and rice, which are considerably less expensive. You can also save money by making your own rusks, muesli and biscuits.
- **Group size.** The bigger the group, the more stoves, fuel and food you will need. A tin of tuna (in combination with other food) is just right for three to four persons, but will not easily stretch to five or six. A packet of 'Smash' (dehydrated potato) may be too much for two persons and just right for three or four. Beware: the servings indicated on labels are usually insufficient for hungry hikers who have done hard physical work for most of the day.

Carrying 'problem' foods

- **Coffee, sugar, powdered cool drinks and milk powder** — these tend to absorb moisture from the air and should therefore be carried in watertight plastic containers. Beware of plastic bags which puncture easily.
- **Cheese** — oozes oil when it gets warm; carry in a sealed plastic bag wrapped in newspaper or your warm clothing.
- **Honey, margarine, jam, condensed milk and other spreads** — use squeeze tubes (similar to toothpaste tubes, but the bottom can be opened) or screw-top containers inside a plastic bag.
- **Margarine, yoghurt** — do not use the original plastic containers. Use a screw-top container, squeeze tube, or a specially isolated container available from outdoor shops, and wrap the container in aluminium foil or newspaper.
- **Fresh eggs** — wrap each egg separately in newspaper or paper towelling and replace them in their original cardboard box. Place the box in a plastic bag and knot firmly. Special plastic containers made for carrying eggs are available. Individual eggs can be placed in a plastic bag and carried in a container with milk powder, flour or sugar. Warn the person carrying the eggs that he has them.
- Food which needs to be kept cool, such as fresh meat, can be wrapped in newspaper which can later be used as a handy 'table cloth' or surface to work on when preparing a meal.
- Do not remove labels from tins, unless you want each supper to become a 'chef's surprise'.

- Discard cardboard packaging to decrease weight and bulk, but take care not to throw away the cooking instructions as well.
- Pre-packing the ingredients of each meal saves time and effort later and allows you to pack food more efficiently. Muesli, milk powder and sugar, for example, can be combined in a plastic container, so that you only need to add water before eating.

Cooking equipment

Unless you are only going on a day-hike, you will probably need to carry a small stove (see Chapter 1). The making of fires is forbidden in most wilderness areas, and you should in any case not rely on finding sufficient dry wood for a fire. A group should carry more than one stove; if your only stove malfunctions when, for example, you are sitting out a snow storm, you could be in serious trouble.

Other cooking equipment which you may require:

- **Billies** (light-weight cooking pots). The number and the size of billies required depend on the meals you are planning and the number of people in your cooking team. Through careful planning and by combining some dishes, a cooking team should be able to manage with two billies. Use lids on the billies as this reduces the cooking time.
- A **billy-grip** to lift your billies from the stove and to hold them while stirring.
- A **lighter or matches** (packed in a waterproof container).
- A **small pan** (preferably non-stick) for frying foods such as eggs or bacon (a small plastic egg lifter is also useful).
- **Spoons** for stirring and measuring.
- A **small knife** for slicing, chopping, peeling, and so on.
- A **tin opener** or, preferably, a Swiss Army knife or similar knife with built-in opener.
- A **small dishcloth** is very useful, as is a scouring pad.
- A five-litre water bag, such as found in wine or fruit juice boxes, is virtually indispensable.

Each person should carry his own light-weight plate, mug, spoon and knife. A screw-top container doubles as a useful mug: you can shake it instead of having to stir coffee, soup, powdered cool drinks and other drinks.

Suggestions for meals

Breakfast

It is essential to have a good breakfast on each day of your hiking trip. The meal should consist mainly of complex carbohydrates, but some protein and fat should be included (all cereals contain some protein).

Suggestions for breakfast

- Tea/coffee and rusks to start the day.
- Cereal or porridge. Cereals include Pro-nutro, muesli or one of numerous others. Serve with hot or cold milk. Instant porridges include Oatso Easy, Tasty Wheat and Maltabella. To prepare your own instant mealie porridge at home: microwave 250 ml of mealie meal in a flat container for 6 minutes at medium power, stirring every two minutes. To prepare, just add boiling water, mix well and leave for one minute before eating (serves two).
- Toasted sandwiches with ham, cheese, tomato, polony or biltong. Use long-life bread for the sandwiches; spread some butter or margarine on the outside and fry them in a pan.
- French toast: Soak a slice of bread in well beaten egg, fry both sides, and serve with cheese, honey or syrup.
- For the traditional bacon and eggs breakfast you will need to carry some margarine or butter. Eggs can be fried, poached, boiled or made into an omelette.
- Fresh fruit, tinned fruit or cartons of fruit juice can be taken if weight is not a consideration. Soak dried fruit overnight in some water. In the morning, simmer for a few minutes, add sugar to taste and serve.
- Natural or sweetened yoghurt can be served with fruit, cereal, or on its own.

Lunch

On a hiking trip lunch usually follows a morning of hard physical activity, which continues after lunch. The food eaten for lunch should therefore be available as energy quickly and allow you to keep going for the rest of the day. Like breakfast, this meal should consist mainly of complex carbohydrates. Small portions of proteins and fats should be eaten to add variety to the meal. Since one seldom has more than an hour available for lunch, it is best not to plan for a cooked meal, but rather to enjoy a fairly light lunch with a high energy content.

Suggestions for lunch

Long-life bread such as rye bread and HiproBread lasts for at least four days in warm weather, and considerably longer in cool weather. Although bread is bulky, it is very filling and a good source of carbohydrates. (Take care to pack it in such a way that it does not squash or crumble.)

- On longer hikes ProVita or Rye-King can be substituted for bread. Three ProVitas have roughly the same kilojoule content as a slice of bread.
- Spreads for lunch: margarine, jam, syrup, honey, peanut butter, Marmite or Bovril, pate or sandwich spread.
- Protein in the form of cheese, biltong, dried sausage, sardines, pickled fish, tuna, pate, Vienna sausages, salami, polony, ham, or any other cold meat.
- Hot dogs are a perennial favourite. You need buns, with a filling consisting of, for example, lettuce, tomatoes and viennas with mustard.
- Fresh greens such as tomatoes, cucumbers, lettuce and green peppers can easily be combined in a salad, or used with cheese or cold meat in a sandwich.
- Tuna salad: tuna, mayonnaise and salad vegetables, pineapple or apple.
- If each member of the group carries an 'emergency lunch', every person will be able to

have lunch on his own if the group plans to split up at lunch time.

- Something sweet: lunch can be rounded off with peanuts, raisins, dates, glazed or sugared fruit, dried fruit, chocolate, energy bars or fresh apples or oranges.
- Drinks such as powdered cool drinks, drinking chocolate, coffee, tea, soup or even milkshake encourage people to take in fluids. To make hot orange tea, mix powdered orange cool drink into hot tea, instead of using sugar.

Main meals

On most hikes the main meal is eaten in the evening. To save torch batteries and fuel, try to cook the meal before it gets dark.

Suggestions for the main meal

- Whether to have a pre-meal appetizer is a question of personal taste. Some suggestions: peanuts, a peanut and raisin mixture, ProVita or crackers with tinned mussels or oysters, fresh baby carrots or celery. Soup drives away the cold and keeps everybody happy until supper is ready.
- Supper, like the other meals, should be based on complex carbohydrates. Rice, pasta, dehydrated potatoes (e.g. Smash) or bread are all suitable.
- If weight is a major consideration, consider either dehydrated dishes with a Soya basis or freeze-dried foods. These dishes can be livened up by the addition of fried onions, green peppers, apple pieces, tomato puree, herbs, mayonnaise, spices, chutney and dried fruit or instant sauces.
- If weight is not a problem, fresh or precooked meat can be frozen and taken along for the first day or two. Tinned meat or fish can also be considered.
- 'Hay-box' foods such as rice and pasta in order to save fuel: Bring the food to the boil and simmer for a few minutes. Wrap the billy in a plastic bag or two. Place it on a closed cell foam pad. Cover it with a sleeping bag or down jacket or similar insulation and leave it there while you prepare the rest of the meal. If the food is not completely done by this time, briefly boil it again until ready. Cooked food can also be kept warm this way.
- Dehydrated vegetables are light and provide variety. On short or easy trips fresh vegetables and fruit can be carried.
- Pre-soak dehydrated vegetables in a leak-proof plastic container for a few hours to decrease cooking time. Allow space for the food to expand (normally to about double their dehydrated volume).
- A sweet dessert rounds off a meal well. Instant puddings are easy to prepare. Add crushed biscuits, peppermint crisp or marshmallows. Melt chocolates or toffees in a tin of Ideal Milk and dip biscuits, fruit or marshmallows in it. On cold evenings you can also try stewed dried fruit (a good way of ensuring that you eat sufficient roughage), sponge or fruit cake with heated instant custard.
- A hot drink after supper, such as Milo, Horlicks or hot drinking chocolate, is especially welcome during winter.

Snacks

Regular snacking between meals is very important to supplement energy intake, particularly during a

strenuous hike or in cold conditions. Each person should carry his own supply of snack foods to eat at any time. Sweets, chocolate, fudge, energy bars, biscuits, peanuts, raisins, nuts, sunflower seeds, dried fruit, halva, or a mixture of these are all suitable (try not to eat sweet snacks only).

Fruit is also ideal, particularly in hot weather. Popcorn is very easily and quickly prepared in camp by warming popcorn in a bit of margarine and popping it in a billy with a lid.

Emergency rations

On any hiking trip each member of the group should always carry an emergency food supply in case you are trapped by bad weather or delayed because of injury or some other unforeseen event. Any food with a high energy content is suitable for use as emergency rations. Do not eat the emergency ration before you are safely back at the cars!

Appendix

Sample menu — 5-day trip for four people

Breakfast

Every day: Rusks, tea/coffee with sugar and milk

Day 1: Yoghurt and muesli

Day 2: Instant oats and raisins

Day 3: Weet-Bix and milk

Day 4: Muesli and milk

Day 5: Weet-Bix and milk

Lunch

Every day: Bread or ProVita. Spreads: margarine, honey, Marmite, cheese, mayonnaise, and cool drink or tea.

Day 1: Cold meat, tomato, mustard, bread rolls

Day 2: Smoked beef roll

Day 3: Tuna mayonnaise

Day 4: Dried sausage

Day 5: Sardines

Supper

Every day: Instant soup

Day 1: Steaks and bread rolls, tomato, cucumber and carrot salad

Day 2: Bacon, onion, green pepper, bolognaise sauce, (see bolognaise recipe) and cheese

Day 3: Bully beef, onion sauce, Smash

Day 4: Tuna, rice and mixed vegetables (see recipe)

Day 5: Toppers, dehydrated vegetables, Smash.

Pudding: instant pudding for three days, hot chocolate for one day.

Snacks: Powdered cool drink, fruit squares, chocolate, tea, coffee, cake mix (raisins, sultana and peel mix), peanuts, sweets, apples. Extra: Salt, herbs and emergency rations.

Breakdown of five-day menu:

Food	Quantity	Mass (g)	Energy (kJ)
Apples (2 snacks)	8 small	800	1 880
Apples (1 supper)	1	150	350
Bacon (1 supper)	1 packet	250	6250
Biscuits (2 snacks)	2 packets	350	7000
Bread (3 lunches)	3 loaves	2700	27964
Bully beef (1 supper)	1 tin	300	3300
Buns (1 lunch, supper)	1 doz	600	6840
Cake mix (1 snack)	1 packet	250	3035
Carrots (1 supper)	4 small	100	200
Cheese (5 lunch, 1 supper)	big block	1 200	20500
Chocolate (2 snacks, emergency)	4x100g	400	8800
Chocolate, drinking (2 suppers)	1 jar (plastic)	200	4400
Coffee (5 breakfasts/snack/supper)	20 sachets	100	420
Cold meat (1 lunch)	1 6 slices	280	3100
Cool drink powder (lunch, snack)	8 packets	800	10600
Cucumber M supper)	1 small	150	60
Dehydrated peas (1 supper)	1 packet	150	2200
Dehydrated vegetables (1 supper)	1 packet	150	2200
Dried sausage (1 lunch)	4 packets	300	3657
Fruit squares (1 snack)	2 packets	250	3125
Green pepper (1 supper)	1 medium	50	50
Honey (1 lunch)	1 jar	250	3250
Instant oats (1 breakfast)		150	2766
Instant pudding (3 suppers)	3 packets	360	2000
Instant sauce (3 suppers)	3 packets	150	750
Instant soup (5 suppers)	25 packets	500	840
Margarine (5 lunches, 3 suppers)	2 tubs	500	15300
Marmite (5 lunches, 3 suppers)	1 jar	63	100
Mayonnaise (2 lunches, 2 suppers)	100ml	75	2300
Muesli (2 breakfasts)	1 packet	500	7725
Mustard (1 lunch)	4 small sachets	20	—
Onion (2 suppers)	2	200	360
Peanuts (1 snack)	1 packet	250	6000
Powdered milk (5 breakfast, suppers)	5x100g	500	7500
Provita (2 lunches)	1 packet	500	9500
Rice (1 supper)	1 packet	300	4500
Rusks (5 breakfasts, snack, supper)	2 packets	1 000	13600
Smoked beef (1 lunch)	1 packet	125	1 400
Sardines (1 lunch)	1 tin	100	800
Smash (2 suppers)	2 packets	224	3100
Spaghetti	1 packet	400	6200
Steaks (1 supper)	4	400	4600

Sugar (5 breakfasts, beverages)	1 packet	500	8300
Sweets (2 snacks)	2 packets	300	4100
Tea (5 breakfasts, lunches)	30 bags	75	—
Tomatoes (1 lunch, supper)	3 small	225	140
Toppers (1 supper)	1 packet	120	1 834
Tuna (1 lunch, 1 supper)	2 tins	400	3200
Weet-Bix (2 breakfast)	1 packet	500	6300
Yoghurt (1 breakfast)	1 container	500ml	2185
		18 717	234 51

Total weight of food carried = 18,717 kg

Average weight = $18,717/4 = 4,67$ kg per person

Average energy consumption = $(234\ 581\ \text{kJ} / 4) / 5 = 11\ 730$ kJ per person per day

Kilojoule content of various foods (in KJ per 100g)

Complex carbohydrates (starches)

Biscuits	1 978
Bran wheat flakes	1 260
Bread, rye	1 021
Bread, white roll	1 140
Bread whole wheat	1 020
Cornflakes, fortified	1 546
Crispbread (Ryevita)	1 348
Macaroni, boiled	1 550
Mueslie	1 545
Oatmeal, raw	1684
ProVita	1 900
Rice, brown, boiled	1 500
Rice, white, boiled	1 530
Smash, powder	1 390
Spaghetti, cooked	1 550

Carbohydrates (sugars)

Boiled sweets	1 373
Chocolate milk	2 222
Gum drops	722
Honey	1 300
Jams	1 096
Malted milk (Horliks)	1 663
Marshmallows	1 340
Toffee	1 806
Sugar, white	1 655
Syrup, golden	1 251

Proteins

Bacon	2 500
Beef, roast	1 100
Beef, sausage	1 113
Bully beef	1 100
Cheese, cheddar	1 705
Cheese, cottage	403
Cheese, cream	1 844
Chicken	1 050
Eggs	617
Frankfurters	1 151
Ham, canned	1 200
Mince meat	1 150

Milk (powdered)	1 500
Sardines	800
Steak, beef	1 150
Tuna	800
Toppers	1 540
Yoghurt, natural	218
Yoghurt, sweetened	399

Fats

Bacon	2 500
Butter	3 087
Chocolates	2 201
Margarine	3 066
Peanuts	2 395
Peanut butter	2 617
Sunflower oil	3 800

Beverages

Beer	175
Brandy	1 276
Liqueur	2 940
Powdered cool drink	1 325
Sherry (dry)	483
Whisky	1 260
Wine, white, dry	313
Wine, red, dry	333

Others		Wine, sweet	346
Apples	235	Coffee Powder	420
Carrots, raw	200	Tea, infusion	0
Cucumber	42		
Dates, dried	1 042		
Dehydrated vegetables	1 500		
Lettuce	50		
Onions	180		
Oranges	147		
Peppers, green	92		
Prunes, stewed	344		
Raisins, sultanas	1 214		
Tomatoes, fresh	59		

Selected recipes for outdoor meals

The following recipes are tasty, tried and tested, quick and easy to prepare, and require few cooking utensils. They can be varied and adapted to suit every taste, or can be used as a basis for other dishes.

BACON, PEAS AND SMASH

Ingredients:

- 1 packet of Smash (dehydrated potatoes)
- 250 g bacon
- 1 packet dehydrated peas
- 1 packet instant sauce.

Method:

Chop and fry bacon. Mix sauce with 300 ml cold water. Add to bacon and boil until thick. Cook pre-soaked peas. Add enough water to make 500 ml. Bring to boil and add Smash. Serve with bacon sauce. *Serves four.*

Variations:

- Fry onion and green pepper with bacon.
- Use smoked sausage instead of bacon.
- Use mixed dehydrated vegetables instead of peas.

TUNA, RICE, AND VEGETABLES

Ingredients:

- 1 cup rice
- 1/2 teaspoon salt
- 3 tablespoons mayonnaise
- 1 tin of tuna
- 1 packet dehydrated vegetables
- 1 packet instant sauce

Method:

Pre-soak vegetables. Boil for a few minutes and add rice, bring to the boil. 'Hay-box' rice and vegetables after initial boiling. Mix instant sauce with 200 ml cold water. When rice and vegetables are done, add tuna, mayonnaise and sauce and bring to the boil again. *Serves four.*

Variations:

- Use noodles or spaghetti instead of rice.
- Add grated cheese just before serving.

TOPPERS, RICE AND APPLE*Ingredients:*

- 1 packet Toppers
- 1 1/2 to 2 cups rice
- 1/2 teaspoon salt
- 1 onion
- 1 apple
- 100 ml chutney
- a little margarine or butter

Method:

Prepare rice (hay box). Fry chopped onion, green pepper and apple in a little margarine. Add Toppers and cook according to directions. Add chutney and serve with rice. *Serves four.*

SPAGHETTI BOLOGNAISE*Ingredients:*

- 1/2 packet spaghetti
- 1/2 teaspoon salt
- 1 packet Toppers (Bolognese or Goulash flavour)
- 1 packet instant cheese sauce or white sauce
- 15 g grated Parmesan cheese

Method:

Cook the spaghetti, adding salt. Add enough milk to spaghetti to make up about 250 ml of liquid. Mix instant cheese sauce with 50 ml cold water, add to spaghetti and bring to the boil. Prepare Toppers according to directions. Serve with spaghetti and cheese. *Serves four.*

Variations:

- Use bacon, chopped up with an onion, instead of Toppers.
- Use smoked sausage instead of Toppers.

SAUSAGES AND SMASH

Ingredients:

- 1 packet smoked sausage
- 1 packet Smash
- 1 onion
- 1 apple
- 1 green pepper
- 1 packet instant sauce

Method:

Fry chopped onion, apple and green pepper in a little margarine. Add sausage (cut into pieces). Mix sauce with 300 ml cold water and add to sausage. Bring to the boil. Prepare Smash-according to directions and serve with sausage. Serves four.

Variation:

- Boil pre-soaked dehydrated peas in the Smash water before adding Smash.

CREAMED HAM AND MUSHROOM PASTA

Ingredients:

- 300 g noodles
- 1/2 teaspoon salt
- 1 onion
- 120 g mushrooms
- 120 g chopped ham
- 1 packet instant cheese and ham
- pasta sauce
- grated cheese

Method:

Cook or hay box noodles, adding salt. Fry onion in a little margarine, add mushrooms and fry until done. Add chopped ham. Add 300 ml cold milk to instant sauce and mix with onion, mushrooms and ham. Bring to the boil. Add cooked noodles and stir well. Add grated cheese just before serving. Serves four.

'HAYBOX' POT

(With acknowledgement to the MCSA Tvl Section Newsletter 7/86)

Ingredients:

- brown rice baked beans chopped sausages soup powder

Method:

Bring brown rice to the boil. Add beans, sausage and soup powder. Hay-box for approximately 45 minutes. Add cheese and serve.

COLD MIXED SALAD*Ingredients:*

cold rice and dehydrated peas any or all of the following: ham, polony, tuna, tomato, pineapple, apple, onion, cucumber, green pepper, lettuce, carrots, and mayonnaise

Method:

Precook rice and peas. Allow to cool. Add other ingredients to taste.

VERSATILE BREAD MIX*Ingredients:*

3 cups of whole-wheat flour

10 ml baking powder

10 ml salt

8 ml cream of tartar

8 ml bicarbonate of soda

100 g instant milk powder

250 g margarine

Method:

Mix dry ingredients. Cut the margarine into mixture (a food processor

can be used to prepare the mixture at home) until it has the consistency of fine crumbs. This mixture can be stored for a long time in an airtight container.

Variations:

The following ingredients can be added to the basic mixture:

- raisins, cinnamon and puffed wheat
- soup powder
- herbs and grated cheese
- onion flakes
- chopped ham or bacon

Mix one cup of bread mix with milk or water to make the following recipes.

Scones

Make a soft dough by adding milk and 1 egg. Spread dough into a 1 cm thickness and cut into squares. Arrange scones in billy or frying pan coated with melted butter. Cover with lid and cook scones on both

sides for 10 to 15 minutes.

Crumpets

Make dough which will drop or run from spoon. Bake in pan.

Dumplings

Make soft, sticky dough. Drop a spoonful at a time into a pot of boiling water. Cover and cook for approximately 15 minutes. Add sugar, butter and cinnamon to boiling water to make a sauce. (You can also drop a spoonful of this mixture at a time into a pot of boiling soup or stewed fruit. Cook covered for approximately ten minutes.)