

COUNTING CALORIES - Ray Ingalls

Longer wilderness trips require more detailed planning for quantities of food required. Food quantities should provide enough calories to prevent significant weight loss. However, an over abundance of food will increase the weight of your pack for the whole trip. A few extra meals are a good plan for those unexpected delays such as waiting two days on Hudson Bay for a boat ride.

By using Table 1 you can calculate a rough estimate of the daily calorie requirement. This requirement is the sum for basal metabolism, muscular activity and specific dynamic energy. Specific dynamic energy is of use only when required to keep you warm in cold conditions.

An example calculation is shown in Table 2. I suggest the level of muscular activity (Table 1) for paddling time as heavy to severe. Many variables can affect these calculations including terrain, temperature, getting wet, paddling effort walking speed, etc.

A suggested mix of food types and the resulting caloric contents are shown in Table 3. A guideline for caloric content of various foods is given in Table 4. As fiber content in a food increases, the caloric content decreases. Vegetables are fine but with higher fiber levels their caloric content is reduced. With increasing fat content, caloric value increases. Thus to reduce total food weight include less vegetables and include more fatty foods. From Table 3 the mix of dried food suggests 1.5 kg are required to provide 6000 plus calories per day while the old standby, pemmican (Table 4) would require 1 kg.

In summary 1 to 1.5 kg. of a suggested mix of dried food is required per person per day to meet caloric requirements.

TABLE 1
CALCULATING CALORIC NEEDS

A. Basal Metabolism	
Men - 24 calories/kg/day	
Women - 21.6 calories/kg/day	
B. Muscular Activities	Cal/kg/hour
Sleeping	0
Light - walking on level ground	1.5
Moderate - fast walking	2.4
Heavy - slow run	3.9
Severe - running	6.3
Very severe - rowing	8.4
C. Specific dynamic energy - Heat of digestion	
10% of A & B	
D. Total calorie requirement	
A & B & C	

TABLE 2
EXAMPLE
CALCULATING CALORIE REQUIREMENTS

75 KG MAN

A. Basal - 75 x 24	= 1800
B. Activity	
Sleeping & resting (10 hours x 0)	= 0
Camp preparation (7 hours x 1.5 x 75)	= 788
Paddling (7 hours x 6.3 x 75)	= 3308
Total	5896
C. 5896 x .10	<u>590</u>
Total calories	6486

<u>TABLE 3</u> <u>MIXED DRIED DIET</u>		<u>TABLE 4</u> <u>ENERGY VALUE OF SOME DRIED FOODS *</u>	
20%	Protein foods		<u>Per 100 grams</u>
20%	Fats & oils (in some foods)	Vegetables	200 - 290
		Fruits	250 - 300
<u>60%</u>	Carbohydrates	Grains	350 - 370
100%	(3/4 starch & 1/4 sugar)	Beans, peas, potatoes, dry skim milk, sugar	380 - 390
		Tofu curds	380
		Hard cheese	390 - 400
		Beef, chicken, venison	420 - 430
		Chocolate candy	480 - 530
		Dry whole milk	510
		Peanuts, nuts, sunflower seeds	570 - 660
		Pemmican (42% beef & 58% fat)	660
		Margarine	710
		Fatty bacon	780
		Fats & oils	890
		Breads & cereals	360 - 390
		Cake mixes	430 - 440
		Crackers	430 - 460
		Cookies	460 - 500
* 410 - 430 calories/100 grams or *115 - 120 calories/ounce		<u>*The Complete Light-pack Camping and Trail-foods Cookbook</u> by Edwin P.Drew 1977 McGraw Hill	
1 kg (2.2 lbs.) food = 4100 - 4300 calories			
1.5 kg food = 6150 - 6450 calories			