

# Fireless Foods

By Denton W. Crocker

**"I do not consider basic nutritional principles as a kind of religion. I do believe, however, that an awareness of them can help us avoid the ill effects of dietary deficiencies and excesses, can be ecologically beneficial and can save us money."**

In the fall of 1973 I set out on the first of September from Katahdin Stream Campground at the base of Mt. Katahdin in Maine for the New Hampshire—Vermont border 400 miles away. I was carrying 55 lbs. The first food drop was at Monson, Maine, 115 miles distant. Twelve days later I limped into Monson where a doctor told me that the increasingly painful and swollen condition of my knees was due to a latent arthritis aggravated by the constant stress upon them. He said I would be a fool if I continued further.

Although for many of my 55 years I have walked the mountains of New England and, more recently, the Adirondacks, none of these individual trips had lasted more than four days. I had long wanted to experience a more extended outing, especially to walk a significant portion of the Appalachian Trail and, despite my health problem, it was a glorious 12 days. Yet I think that only someone who has experienced the dissolution of a long-cherished dream can know how crushed I felt when I was told to go home. During the several weeks of recuperation with tentative short walks, followed by hill climbs and, finally a couple of overnight hikes, I had one major preoccupation. If I could cut the

weight of the pack, perhaps I still could take trips of 10 to 12 days duration. How could I reduce pack weight? A number of options presented themselves, but I will follow here only the path of my journey into the food-nutrition question.

I set up seven criteria against which to measure a trail diet: (1) proper caloric and nutritive value, (2) low weight, (3) palatability, (4) a minimum of preparative time and equipment required, (5) resistance to spoilage and damage by temperature extremes and physical shock, (6) small bulk, (7) low cost. The first three of these are especially closely interrelated. Food excelling in lightness is no good on the trail if the stomach rejects it or if there is insufficient caloric content to fuel the fires of the metabolic boiler. And what about nutritive value? Though trained as a biologist, I had an information gap here. Fortunately, early in my search, I ran into a paperback by Frances Moore Lappe, *Diet for a Small Planet*, sponsored by David Brower's **Friends of the Earth**. It and other readings led me to other publications which are the sources from which I was able to develop some background and to construct a nutritious trail menu.

I do not consider basic nutritional principles as a kind of religion. I do believe, however, that an awareness of them can help us avoid the ill effects of dietary deficiencies and excesses, can be ecologically beneficial and can save us money. As an antidote to ardent lectures from various foodfaddists and diet advocates, I recall the opening of the chapter on food in Harvey Manning's *Backpacking: One Step at a Time*. He ventures the thought that on a backpacking trip of a few days, food is a frill. Though he is quick to qualify the statement, he has a point. He goes on to say that if one does choose to take food, there is no need on a short trip to worry about vitamins, minerals, proteins, etc. The only requirement is calories. Again, I suppose he is justified in calling attention to frequent undue concern over balanced nutrition on relatively short trips. But I enjoy developing light, compact, cheap and tasty meals which are nutritionally correct, and I do enjoy eating. With the thought that others might enjoy formulating their own trail menus I offer this account of some of the trials and tribulations in developing mine. If you don't like the food I came up with, maybe some of the ideas will be food for thought.

Be forewarned, however. You may find as I did that your interest in backpacking nutrition extends into everything you eat, whether you're on the trail or not.

#### GENESIS OF A TRAIL MENU

I had estimated the 400-mile Katahdin-to-Vermont trip to take about 40 days. The food was divided into fourths. I started with one of those and was to pick up the others at roughly equally spaced food drops. The food might be described as conventional modern. The major constituents were freeze-dried dinners, gorp (chocolate, dried fruit, nuts) for lunch and snacks, and store-bought granola or other cereal for breakfast. I had no idea of the nutritional value of the food except for calories. This energy value worked out to about 3000 kilocalories (kcal) per day. These calories (and whatever nutrients were there also) weighed 1.6 lbs. per day and cost almost exactly \$3.00 per day.

After my ignominious return and during my recuperative hikes, I tried a variety of menus with an emphasis on home preparation. Breakfast was easy to work out. My older daughter had given me a recipe and the ingredients for a granola at least a year previously. I modified it several times and worked out the energy and nutritional value of the final product. The following recipe is the result.

#### TRAIL GRANOLA

Ingredient	Volume	Weight (oz.)
<b>Dry</b>		
rolled oats	6 cups	23.4
wheat germ	2 cups	5.8
brown sugar	½ cup	3.3
salt	1 tsp.	0.3
<b>Liquid</b>		
vegetable oil	½ cup	3.8
corn syrup	½ cup	5.6
vanilla	1 tsp.	0.3

Roast on two cookie sheets with raised edges for one hour at 200° F, stirring at 15 min. intervals.

After roasting add:

sunflower seeds	1 cup	6.2 oz.
raisins	1 cup	4 oz.

Yields 10.5 cups with a total weight of 46.7 oz. One serving is about 2/3 cup (3 oz).

I individually prepackage my daily ration of granola together with sufficient milk powder (½ cup or 1.3 oz) so that all I have to add is water. One serving, including milk powder, provides 656 calories, 0.9 ounces of protein (39% of Recommended Daily

Allowance—RDA), 0.6 ounces of lipid, and 2.6 ounces of carbohydrate. The complete range of essential amino acids in the milk powder assures efficient utilization of total-protein. Minerals and vitamins are supplied especially by the rolled oats, wheat germ and sunflower seeds.

Lunch was easy. On the AT trip a hiker told me I could enhance the nutritional value of my peanut butter by adding honey and milk powder. I realize now that except for the lack of bacon grease, this is the "Citadel Spread" for which Ed Garvey gives a recipe in *Appalachian Hiker*. I make it by using equal parts by volume of the three ingredients. The peanut butter and milk powder give me the full range of essential amino acids and the honey is a source of quick energy. Also, peanut butter is an especially rich source of niacin. Dried fruits are about 25% water; I enjoy them enough to take them anyway, but I pit the prunes and further dry them in a 150° oven for two hours. My noontime meal supplies me with 1212 calories, 0.7 oz of protein (30% of RDA), 1.4 oz. of lipid and 8.6 oz. of carbohydrate.

My major problem was what to have for the evening meal. I developed first a series of recipes for rice, bean, or pea dishes flavored with a package of instant soup powder and one or more spices. These were tasty and inexpensive, and I had the pleasure of being more involved in their preparation than when I had simply opened a one-package meal and added it to hot water. But these meals weighed no less than my previous menus and the cooking times were so long that fuel weight and bulk would be a serious problem on a long trip.

Could I dispense altogether with cooking? The weight advantage would be considerable. On the AT trip my Sigg Tourist cook kit plus Svea 123 stove (without windscreen) weighed 31.5 oz. Even the lighter cooking kit I reduced to after the trip weighed 27 oz. including the filled stove (with windscreen). I am assuming here that we are all ecologically minded hikers who agree that with the great number of hikers now on trails, we should not build wood fires. In fact, in most trailside campsites, we *cannot* build fires because of the lack of wood.

At about this time I read an article by Albert Saijo in which he mentioned a meatless "pemican" baked at home and carried as a sort of biscuit. He also urged trying a no-cooking trip. It took me four tries to come up with a recipe for what I call my grain-fruit trail bar which was nutritionally rich yet which had the proper consistency and flavor. Here is the recipe:

#### GRAIN-FRUIT TRAIL BAR

Ingredient	Volume	Weight (oz.)
<b>Dry</b>		
whole wheat flour	2 cups	12.0
wheat germ	½ cup	1.5
skim milk powder	½ cup	1.3
salt	1 tsp.	0.3
Soy flour (full fat)	1 cup	4.0
currant raisins	1 cup	5.0
chopped dates	1 cup	5.5
<b>Liquid</b>		
eggs	4 extra large	9.0
vegetable oil	½ cup	3.8
molasses	½ cup	6.0
vanilla extract	1 tsp.	0.3

Spread on two cookie sheets, each about 8" x 11". Bake 2½ hrs. at 225° F and leave in oven until cool. Final baked weight, 39.7 oz. Provides 6 meals.

The trail bar ingredients can be varied according to taste and nutritional requirements. Blackstrap molasses has higher concentrations of vitamins and minerals than light molasses. A quarter cup of dried brewer's yeast adds a wallop of vitamins, minerals and protein. Neither of these causes the flavor to change noticeably. I have substituted chopped, dried apricots and peaches for the raisins. Both are richer than raisins in vitamins and the apricots have a welcome tangy quality. I once added some diced candied lemon peel and it was tasty too.

The daily ration of trail bar contains 761 calories, 0.9 oz. of protein (39% of the RDA), 1.0 oz. of lipid, and 3.8 oz. of carbohydrate. When eaten with a pint of malted milk shake, my evening meal gives me 1232 calories, 2.2 oz. protein (96% of the RDA), 1.1 oz. lipid, and 6.5 oz. carbohydrate.

Beverage for the day is water where I find it plus a 1-quart plastic bottle of Kool-Aid. This drink is a source of sugar energy and is enriched with vitamins A and C and with phosphorous and calcium. If less enrichment is desired, Wylers soft-drink mixes have only vitamin C added. A second 1-quart plastic bottle and a 1-pint plastic bottle give me, when necessary, independence from external water sources for one full day's needs, including food preparation.

The total menu for one day is as follows.

### TRAIL MENU

#### BREAKFAST

Item	Volume	Weight (oz.)
Granola (to make 1 cup)	2/3 cup	3
Tang (to make 1 cup)	2 tbsp.	1.1
<b>Breakfast Subtotal</b>		<b>5.4</b>

#### LUNCH & SNACKS

Peanut butter mixture	1/2 cup	2
Chocolate		2
Kool-Aid (to make 1 qt.)		3.4
Crackers (4)		2
Dehydrated fruit		2.3
<b>Lunch Subtotal</b>		<b>11.7</b>

#### SUPPER

Grain-fruit trail bar	1/6 of recipe	6.6
Powdered skim milk malted	1 cup	2.6
milk powder (to make 2 cups)	1/3 cup	1.8
<b>Supper Subtotal</b>		<b>11.0</b>

#### TOTAL

28.1

### EVALUATION OF THE DIET

Does this proposed daily menu really sustain a hiker on the trail? Is it sufficiently tasty? Can you approach it with relish after several days? To answer these questions I left on July 3, 1974 for five days among the low mountains and in the Squaw Brook valley about five miles west of Indian Lake in the lower Adirondacks. I spent one relaxing day at my tent site, but in the three days of actual hiking on this 16-mile trip, 6 miles were spent bushwhacking. This included the ascent and descent of Lewey Mountain (3742 ft.) and the ascent of

Snowy Mountain (3898 ft.) on its trailless west side, a total of about 2300 ft. of bushwhacking climbing. Though unremarkable in most contexts, I thought the trip was of sufficient rigor and length to test the diet.

The results? I looked forward to and enjoyed eating each meal even on day five. Furthermore, I could not detect any loss of stamina. Of the 15,500 kcal. carried, I consumed all but 1674 (11%). Thus I was eating 2765 kcal. per day over the five days. This is not out of line considering that only the equivalent of three days were taken up with strenuous hiking. Apparently the calories ingested represent most of the calories burned up in that although I lost six pounds on the trip, these were regained in two days to bring my weight within the normal daily range of variation. I assume, therefore, that the loss was largely dehydration. There is significance in noting the kinds of food not eaten: 11 wheat crackers, 3 oz. chocolate, 1 day-ration of dried fruit and 6 oz. of the peanut butter-honey-milk powder mixture. These are all lunch and snack items of particular appeal to me, yet apparently I was sufficiently sustained by the other two meals that I was not motivated to dig into them.

In summary, let's look at the original seven criteria for a trail menu and see how the one developed here compares.

#### 1. Proper Caloric and Nutritive Value

Field trial suggests that the caloric content is sufficient for a person of my weight (190 lb.) engaged in vigorous exercise at low altitude in the summer. Nutrient quantities mostly exceed national standards.

By weight, the daily menu works out to contain 14% protein, 67% carbohydrate, 11% lipid, and 5% water. Protein supplies 13% of the calories, lipid supplies 23%, and carbohydrate 64%. Caloric content is 110 per ounce.

#### 2. Low Weight

All three meals can be prepared in the field and eaten with only two utensils, a 1-pint plastic bottle in which I mix the granola-milk powder with water (and from which I eat it), and a spoon to eat it with. The bottle also serves to shake up with water my evening drink of milk powder plus malted milk.

Thinking just of the food, my new menu weighs more than what I took on the 12-day AT trip in Maine (1.8 lbs per day vs. 1.6 lbs. per day). But when cooking gear is considered I am now a bit ahead. The former gear weighed 4.3 lb. (with a full stove and 1 qt. of extra fuel). Now, my 1-pint plastic bottle and spoon together weigh 3.5 oz. Now, on a 12-day trip, food and eating utensils would weigh 21.8 lb. Formerly I carried 23.5 lb. Is the saving of 1.7 lb worth all the trouble of devising the menu? I think so. At least the investigation has been fun, but now also I am confident of the nutritional value of what I'm eating and I'm way ahead on criteria #4 and #7. And, of course, on shorter trips I'm saving more weight. On my five day trip I carried 9.2 lbs. Instead of 12.3 lbs.

#### 3. Palatability

Enjoyment of food is a complex matter involving more than the food itself. Setting and mood are mixed in too. I suppose that the fact of my having devised the menu and precooked the food itself enhances its appeal for me and I have tried to achieve a variety of flavors, textures and appearances. I look forward to my meals.

#### 4. Minimum Preparation Time and Equipment

Evaluation here tests in part our reasons for entering the woods and what gives us pleasure once we get there. As Nessmuk says, "We do not go into the green woods and crystal waters to rough it, we go to smooth it. We get it rough enough at home. . . ." Though I doubt that every trip I take henceforth will be a no-cooking trip, there is something remarkably peaceful about an evening meal where I can just reach into the pack, pull out two small packages and, with a cup of water, have my supper ready. I can lean against a tree and savor the sights, sounds and odors which I entered the woods to enjoy.

Other considerations enter in here too. Have you ever tried to cook a meal over a stove at the height of black fly season? Have you ever done more slapping than cooking until you quit in disgust and ate a candy bar instead? Have you ever been on a fall trip when it turned really cold and you tried to light the old Primus with numb hands? Hot food has psychological value in cold weather, but

the heat calories contributed are quickly radiated away. It is a matter of mind over matter.

### 5. Resistance to Spoilage and Damage

Food left over after a trip disappears rapidly, but I have hidden samples of all the menu items to test keepability for periods up to two months at summer temperatures. I have not been able to detect any deterioration. Remnants of one batch of trail bars were enjoyable after four months. Freezing has no effect on any of the items. The consistency of the trail bar is such that the difficulty of spreading it on the cookie sheets for baking is amply rewarded by a baked firmness that resists crumbling.

### 6. Small Bulk

The volume of one day's ration is 80 cubic inches. This is equal to a cube, 4 1/3 in. on each dimension, or to the volume occupied by 1.4 liquid quarts or one half a box of facial tissues.

### 7. Low Cost

The \$1.30 per day (Fall 1973) which the ingredients of this menu cost is less than half the \$3.00 per day (also Fall 1973) of my former trail diet. The low cost is achieved by purchasing as many "raw materials" as possible as opposed to prepared foods. Robert Wood in his *Pleasure Packing* offers the opinion that backpacking is cheap when compared with other vacations and that

freeze-dried foods are cheap in comparison with restaurant meals. I agree. But on a long trip, food cost can be an important factor. Again, it is a matter of point of view. I like to think of my food as coming from as simple a technology as possible.

### CONCLUSION

You may have noticed that the menu is meatless. This was not intentional at the beginning. I'm not a vegetarian, but I'm coming to realize that as a member of the nation producing the most food in this protein-hungry world, there is some simple ecological-political-ethical information I must accommodate to.

1. The high productivity of our agricultural enterprise is sustained only by enormous inputs of increasingly scarce and expensive energy.
2. Cattle must be fed 21 pounds of plant protein to produce one pound of beef protein for human consumption.
3. On the average we Americans consume almost 50% more protein than called for by the National Academy of Sciences recommendations.
4. We must either abandon our brothers in other lands to starvation, or else change our dietary habits and as one of the short-term aids to their survival, export ever greater quantities of protein to them.

I concluded that I had better examine my total protein intake, adjust it downward to recommended healthful levels if necessary, and then achieve this level by eating less meat and more plant protein.

Entering a wilderness, I quickly gain a peace and communion with the natural order of things. Perhaps these thoughts in support of this trail menu can help achieve a similar peace with my fellow man even at a time when I am most distant from him.

### SOURCES OF INFORMATION

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