

### *Wholesome Proteins*

**N**UTS AND NUT BUTTERS. Next to fruits, nuts are one of the most essential foods in a well-balanced and wholesome diet. Nuts are highly nutritious, one of nature's most nutritionally concentrated foods. In their dry state they contain an average of 5 percent water, 20 percent protein, 50 percent fat, and 2 percent mineral matter. With the exception of the chestnut, nuts contain but a small percentage of starch. As in all seeds, the mineral matter of nuts contains a large amount of phosphoric acid, potash (potassium salt), and magnesia, while they are deficient in sodium, lime, and chlorine. They should therefore always be eaten with fruits or green leaf vegetables or fruit juices to make up for this deficiency.

Nuts are often used as a dessert after a heavy meal. In this case they are harmful, as they require the full action of the digestive juices. Combined with fruits or vegetable salads, nuts make a complete meal in themselves and their indigestibility in most cases must be attributed to lack of wisdom in the choice of food eaten with them. If nuts are thoroughly masticated and used in small quantities and well combined, they are easily digested and readily utilized by the human body.

Scientific investigations prove that all nuts, especially in the form of unroasted nut butter, furnish a relatively high amount of basic amino acids, and that nut proteins are of a high biological value. Nuts and nut butters made from the unroasted whole nut furnish the necessary proteins and fats combined with organic salts in the purest form, and they are therefore superior to the extracted or



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*Nuts provide an excellent source of high quality protein. Care should be taken to chew them thoroughly. Common nuts include the following (some of which are pictured above): walnuts, Brazil nuts, coconuts, filberts (hazlenuts), pecans, butternuts, chestnuts, almonds, pistachios, pine nuts (pignolias), macadamias, cashews, and hickory nuts.*

isolated fats.

Emulsification of nuts by machines obtains a fine consistency reached only by the most careful mastication. As most people have more or less defective teeth, it is seldom that the entire edible nut is reduced solely by mastication to such a state as to contain no hard particles when it enters the stomach. Even small particles of such concentrated foods as nuts are not easily penetrated by the digestive juices, often resulting in their passing undigested through the alimentary canal. Experiments have proved that the coefficient of digestibility is from 5 percent to 10 percent higher in nut butter than in whole nuts, even if well masticated.

While people who have defective teeth should use nuts in the form of nut butter, in which the fats are brought into a state of emulsion, attention should be paid to the fact that nut butters are frequently made from highly roasted nuts, which

contain free fatty acids and are often heavily salted. Such preparations are not wholesome, as they overtax the liver and kidneys. Nuts that enter into the preparation of nut butters should be dried or evaporated at a temperature of not more than 160 degrees F. to preserve the vitamins and to remove sufficient moisture to make the nuts crisp. In this condition the nuts can, by means of a nut mill, be converted into a smooth butter which is easily assimilated and is superior in nutritive value to flesh foods.

**Legumes.** Legumes in their dry state have a very high percentage (over 20 percent) of proteins, resembling nuts in this respect, from 1.5 to 16 percent fat, and from 50 to 60 percent carbohydrates, mostly starch. The soya bean ranks highest in protein, many varieties ranging as high as 35 percent in this constituent. In fat content the soya bean ranges from 16 to 18 percent. The composition of mineral matter of legumes resembles that of cereals, showing a large amount of phosphorous and magnesium. They are, however, deficient in calcium and iron. Only lentils have an appreciable amount of iron. Legumes are therefore decidedly acid-forming; in fact, in their ripened seeds are stored small amounts of purine bodies, substances similar to urea. Their high protein and carbohydrate content, with a corresponding deficiency of alkaline-reacting organic salts, renders them acid-forming. They should therefore be eaten in moderation and with discrimination.

*Beans* and *peas* are especially valuable. They may be used at different stages of their growth, namely, as tender pods (string beans and sugar peas) which can be gathered when the seeds are less than half-grown. In this form, if eaten with the pods, they produce an alkaline reaction, as they contain more calcium and less phosphoric acid.

The "mess of pottage" that Jacob sold to Esau for his birthright is supposed to have been made of lentils. A Hindu proverb says, "Rice is good, but lentils are my life." Historically, the Arabs would feed their horses ground beans to prepare them for extraordinary exertion.

In Eastern Asia, the *soya bean* ("Asia's cow") is one of the chief providers of protein and fat, and is second only to rice in importance as a food crop. It



Roger Smith

*Legumes, also known as pulses, come in all shapes, sizes, and colors. They include (some shown above): beans—mung, aduki, garbanzo, cranberry, green, pinto, navy, red, white, black, anazazi, kidney, soy, lima, fava; peas—common, black-eyed, chick-pea, cow-pea; and lentils—green, pink.*

contains more than four times as much protein as rice, and also has 16 percent fat content. It is processed into a great variety of products, all having a high percentage of protein. Soya beans, when about three-quarters grown, make a most palatable and nutritious green vegetable, like the green pea or the lima bean.

A vegetable milk is made from the dried beans. The milky emulsion thus obtained is similar in appearance to cow's milk, but naturally of a different chemical composition, especially in mineral elements, owing to its deficiency of calcium, sodium, and chlorine. This soya bean milk is frequently used in making bread, cake, and in creaming vegetables. If left in a warm place, it will turn sour like animal milk; the curdling of the milk may be produced by the addition of some lemon juice. The fat or oil of the soya bean is of excellent flavor and is used for culinary purposes throughout the orient. It is more easily digested than animal fats and is equal in nutritive value to peanut oil.

*Lentils* flavored with green-leaf vegetables make excellent soups and stews. The preparation of legumes, especially in their dry state, is one of great importance. In order to insure their digestion and assimilation, they should be cooked in soft, or better yet in distilled, water if available. If the water used for cooking is hard, due to the presence of calcium carbonate, 1 teaspoonful of baking soda per gallon may be added, and then boiled and cooled before using, in order that the calcium carbonate or lime may precipitate. It is advisable to soak lentils and beans over night in water to soften them.

Experiments have shown that the digestibility of legumes is facilitated by using distilled water in cooking; they can be made still more palatable if served in the form of puree by pressing the boiled seeds through a sieve. Steam cookers or double boilers are very suitable for preparing legumes; two or three hours will generally be necessary before the legumes are done. A fireless cooker may be used to advantage for this purpose. The addition of a little lemon juice, some vegetables and savory herbs will also promote their digestion.

Flours made from dried peas, beans, and lentils are excellent for making soups and purees, but a double boiler should always be employed for this purpose to prevent scorching. They should always be simmered very slowly.

Legumes, if properly prepared and not eaten in excessive quantities, well combined and balanced with green-leaf vegetables, are not hard to digest. No starchy food should accompany this meal. With these necessary precautions, legumes will not occasion the usual disagreeable symptoms occurring during the process of digestion. If eaten often and to excess, however, they produce acidity of the blood due to their large amount of nitrogenous matter and acid-forming elements. Outdoor workers can digest legumes better than sedentary workers; the latter group should not eat them more often than once or twice a week.



*Barley*



*Rice, Brown Bismati*

*Peas* may be eaten with or without the pods. Green peas form a nourishing and also a very palatable food. They contain 9.5 percent sugar and other carbohydrates, and 5.5 percent protein, with a small amount of fat. The mineral matter contains an abundance of magnesia (MgO) and iron.

**Dairy Products.** The statement that milk is a great builder of sturdy children is altogether at variance with facts. There is found perhaps a greater discrepancy in quality and chemical composition of milk than in any other food. Cow's milk produced under ideal conditions is preferable to the many artificial and demineralized foods of commerce, *if* it is used judiciously and supplemented by green-leaf vegetables, or fortified by fresh fruit and vegetable juices. We are not justified, however, in recommending its indiscriminate use. Milk and milk products are far from being absolute necessities for the maintenance of the health and vigor of the race. The milking of cows is an unnatural process. It was only after much breeding that a continuous supply was secured from cows and goats.

Pasteurizing (heating up to 158° F) or boiling milk destroys the soluble ferments and some B vitamins and alters the taste and organic composition. Raw milk, therefore, is preferable for infants and children, provided it comes from properly fed, sanitized, and cared for animals and is available in one's area. Cow's milk contains more than twice as much protein as mother's milk, and children taking a quart of milk daily, in addition to other foods, are being overfed. The judicious use of other clean, pure sources of protein will supply most, if not all, of the nutrient factors required for normal and healthy growth.

Milk, being a complete food, should be treated as such and should never be consumed with other proteins. It should be taken preferably by itself and sipped slowly. The addition of perhaps a small amount of whole grains is tolerable. The giving of strained juices of such fruits as oranges, prunes,



and figs is not only very beneficial, but actually essential to the baby when deprived of mother's milk.

All *cheeses* are concentrated foods, rich in casein, fat, lime (CaO), phosphoric and sulfuric acids, also containing from 3 to 4 percent table salt. They are therefore highly acid-forming foods, and if used at all, they should be eaten in small quantities combined with vegetables. So-called cottage cheese, if made from whole milk and unsalted, is the most wholesome form of cheese.

*Eggs*, containing as they do an excess of nitrogen and phosphoric acid, are highly acid-forming. For this reason they should be consumed in moderation, and always combined with vegetables or citrus fruit juices, which are strongly alkaline. Salads comprising green leafy vegetables are preferable. Beaten eggs for omelette may be vegetized by the addition of a teaspoonful of dried powdered vegetables such as celery, spinach, or beet leaves. This contributes to the alkalinity of an otherwise acid-reacting food. Eggs are also desirable poached, coddled, or soft boiled.

**Fruits rich in protein.** The *avocado* is richer in protein than most fruits, while the best varieties have more than 20 percent fat in a very palatable and digestible form, superior to butter fat. It is an excellent addition to combination raw vegetable salads.

*Sun-dried olives* contain as much as 5 percent protein and 50 percent fat, and are equal to some nuts in nutritive value. Eaten with sweet fruits, they make a palatable wholesome combination. Only in the fully ripened sun-dried olives are all the nutritive principles of the olive preserved, and although they still retain some of the bitter taste, which is very pronounced in the matured olives while on the tree, they are undoubtedly more wholesome than the pickled olives. In the pickled product, the bitterness is neutralized by the application of a lye solution.

*Carob or St. John's Bread* is rich in sugar, fairly so in protein and readily assimilable. Both the

ground carob in the form of meal or flour and the molasses-like syrup that the pod yields are pleasing additions to the human dietary. The whole pod, if thoroughly masticated, seeds ejected, will admirably serve as a sort of confection. Chewing the whole pod, as is, encourages thorough mastication, yielding needed exercise to the teeth and generating enough saliva and pepsin for good digestion.

As a breakfast food carob is richer and carries more protein than wheat. Well balanced in its constituents, it compares favorably with cow's milk. The carob pod, meal, or flour require no cooking to be palatable. They are very nourishing and easily digested. All vitamins and organic salts are thus retained in their natural state.

**Grains.** In his book *Rational Diet* (now out of print) Otto Carque lists the average percentage of protein in water-free grains thus: rice 9.0 percent; corn 11.2 percent; oats 11.9 percent; green corn 12.6 percent; barley 12.7 percent; rye 13.5 percent; whole wheat 15.7 percent.

**Oily Seeds.** All natural seeds rank high in protein, viz.: caraway seed—19.8 percent; poppy seed—19.4 percent; flax seed—22.6 percent; mustard seed—27.6 percent; sunflower seed—14.2; sesame seed—36.0 percent.

*Flax seed* is frequently used for medical purposes as an emollient and demulcent in irritations of the mucous membranes, also as an ingredient in many cereal preparations to give them a slightly laxative effect. In Asia Minor *sesame seed* is mixed with honey and preserved with citron and sold as a luxury. Elsewhere it is used in confections and bakery goods. The oil obtained from the seeds resembles olive oil. The nut butter is called *tahini*, which has many uses as a sauce and spread.

*Sunflower seeds* are derived from the sunflower which is grown in the United States, Austria, southern Russia, India, and China for the purpose of making sunflower oil. The seeds of the *poppy* are also frequently used to produce table oil. □

—Lillian R. Carque



Millet



Wheat berries