



Ethnobotanical Leaflets

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The Incredible Peanut

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According to Webster's New Collegiate Dictionary, a peanut is "a low-branching, widely cultivated, leguminous, annual herb with showy yellow flowers having a peduncle which elongates and bends into the soil where the ovary ripens into a pod containing one to three edible seeds" (7). However, this definition does not even begin to give any indication of the importance of the peanut as an agricultural power in the world today. Therefore, this paper will discuss the peanut including its history, economic uses, and other pertinent information regarding this amazing plant.

The scientific name for the common, commercially grown peanut is *Arachis hypogaea* L. Contrary to popular opinion, however, the peanut is not really a nut such as a pecan or walnut. It is actually a close relative of the black eyed pea in the family Leguminosae. Legumes are plants in which the roots contain nodules of nitrogen fixing bacteria which return remarkable amounts of nitrogen to the soil. Logically, the peanut is a perfect crop to rotate in with soil depleting plants like cotton and is used extensively for this purpose (8).

The peanut plant is a sparsely hairy, taprooted, annual bush about 45 cm tall when mature. The four main botanical varieties are Virginia, Spanish, Valencia, and Peruvian Runner. They are distinguished from each other by branching habit, branch length, and hairiness. The most interesting facet of peanut growth is the development of the seeds. After the small, yellow flowers pollinate themselves, the stalks at the bases of the ovaries, called pegs, elongate rapidly and turn downward due to geotropism. The peg then buries itself several inches in the ground to mature in approximately four months (6).

In order for peanuts to be grown efficiently, several habitat criteria must be met. One of these is a suitable climate. For best yields, peanuts require a growing period of 4-5 months with a steady, rather high temperature and an annual rainfall of about 50-100 cm. The growing season must be long, warm and moist, but the harvest season must be dry so the pods will pull out of the ground. Another requirement is a light-colored, well drained, sandy loam soil. If the peanuts are grown in too heavy soil, the pods will remain in the ground when the plants are harvested (4).

Peanuts are grown in countries with warm climates all around the world. India produces about six

million metric tons annually and is easily the world's leading producer. Mainland China is the second largest producer of peanuts with about 2.7 million metric tons produced annually. The United States and Africa are the other leading peanut producing areas (8). In every country except the United States, the vast majority of peanuts are used to make peanut oil, which is the world's second largest source of vegetable oil (6). The uses of the peanut in the United States will be discussed later in this paper.

The history of the peanut traces a path back over several continents and finally ends up in South America. The peanut is thought to have originated in northern Argentina or southern Bolivia because this area has the most diversity in the number of wild species in South America. *Arachis monticola*, which is restricted to northern Argentina, seems to be the closest relative to *Arachis hypogaea* (5). However, the discovery of a fossilized peanut over 10,000 years old at Chlien-shan-yang in China has cast some doubt on this widely held theory and it will probably not be resolved until more evidence is found (2). Nevertheless, it is widely accepted that the cradle of domestication for the peanut is Peru. Containers of cultivated peanuts have been found at archeological sites in Peru that date back to at least 3500 years ago (9). Peanuts were highly valued by the Peruvian Indians and were used as money, medicine, and status symbols as well as food (3).

There are several theories as to how the peanut plant became distributed throughout the world and since they are all based on speculation, one theory is not necessarily better than the others. However, one of the more widely held theories is that in the 1500's, the Portuguese carried peanuts to Africa from Brazil and the Spanish took them to the Philippines from where they spread to Malaysia, Japan, China, and India (6). Peanuts reached North America during the 1600's. Since they were a cheap source of food, the Europeans used them to feed captured slaves being transported from Africa to North America. The peanuts were then found to grow well in what was to become the southeastern United States

The peanut is one of the most nutritious foods on the market today. The seeds consist of 50% oil and 25% protein. Although the protein in peanuts is deficient in sulphur containing amino acids, the percentage of protein in peanuts is higher than in most meats. The remainder of the peanut is carbohydrate, water, fiber, and ash. Peanuts are rich in B-complex vitamins, especially thiamin, riboflavin, and niacin. With all this, and oil which is 80% unsaturated fat, the peanut is an ideal energy source for everyone, especially people on a low cholesterol diet (1).

Besides being an incredibly widespread and nutritious plant, the peanut has a remarkable number of economic uses. In the United States the peanut crop is used differently than in the rest of the world. About half of the crop in the U.S. is ground into peanut butter, while salted peanuts account for 20% of the crop and about 16% is used in confections. Not only are the seeds of the peanut of use, but also every other part of the plant. The shells are high in cellulose fiber and can be used as boiler fuel or in producing particle board along with many other uses. The peanut vines and leaves make excellent feed for livestock (8).

Of all the people who have researched peanuts, no one has done as much to promote them as George Washington Carver. He knew the southern United States had to find a crop to replace cotton, which was

being destroyed by the boll weevil, and the peanut seemed to be the logical answer. Carver subsequently found over three hundred varied uses for the peanut and peanut plant. These products ranged from shoe polish to milk to linoleum. Because of this research, the production of peanuts skyrocketed (3).

Over the past one hundred years, the peanut has developed far beyond its former role as a nice, little snack to crunch at baseball games or smear on sandwiches. As the world population races by five billion and protein deficiency becomes more and more apparent, the need for a cheap, reliable protein source is going to become imperative. This is when the peanut may have to rise to the occasion to help feed the world.

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