COWPEA PRODUCTION IN THE UNITED STATES

The cowpea, *Vigna unguiculata* (L.) Walp., has been cultivated since Neolithic times, and it is one of our most ancient food plants. Cowpeas are important in world agriculture with more than 12 million acres (5 million hectares) produced annually. The seed, leaves, and shoots provide a significant portion of the dietary protein in the stable cereal diets of people in many of the developing nations. Although the cowpea is an excellent forage and green manure plant and was once an important agronomic crop in the United States, there is only limited agronomic use of the crop in this country at present. However, the cowpea has long been valued in the South as an edible table legume, and an extensive industry now exists to supply the cowpea products that are consumed nationwide.

The cowpea is an Old World crop. Although its exact center of origin is unknown, the cowpea most probably originated in Africa or Asia. The crop was first introduced into the New World in the latter part of the 17th century, and it has been cultivated in the southern parts of the United States since the early 18th century. Cowpeas are now utilized throughout the country as both a vegetable and a dry bean. The crop is a popular vegetable in all of the southern states, where an extensive industry exists to supply fresh-shelled green peas. Additionally, there are extensive dry seed industries in both California and Texas. Both fresh and dry peas are processed; Georgia is the leading processor of fresh peas and Texas is the leading processor of imibed "dry" peas. Accurate production statistics aren’t available, but the sum of the best estimates by state indicates that about 200,000 acres (80,000 hectares) of cowpeas are grown in this country each year.

There is a broad range in the characteristics of the cowpea cultivars that are popular in the United States, but most can be classified as being of the blackeye, crowder, or cream seed types. Each type has a distinct appearance and flavor and is classified as being of the blackeye, hull, or cream seed types. Each type cultivated in the United States, but most can be classified as being of the blackeye, hull, or cream seed types. Each type of cowpea being grown is referred to as a vegetable crop.

Cowpeas are tolerant to drought and hot weather, and they can be grown quite successfully under conditions that are totally unsuitable for such table legumes as the common bean, *Phaseolus vulgaris* L., and even the lima bean, *Phaseolus lunatus* L. However, cowpeas are quite susceptible to cold soils, and should not be planted in the spring until soil temperatures are at least 70°F (21°C). Cowpea culture is quite similar to that used for the other table legumes, and extensive use is made of the practices and equipment that have been developed for these crops. When compared under appropriate cultural regimes, cowpea seed yields approximate those expected for the common bean.

The nutritive value of cowpea seed compares favorably with that of other plant and animal derived food sources. The protein content of cowpea seed is high, usually ranging from 19 to 26%. The protein is high in the amino acid lysine, but, like other legume seed proteins, is deficient in the sulfur-containing amino acids cystine and methionine. The nutritive value of cowpea seed can be increased by cooking to lessen the activity of such heat-labile antinutritional factors as haemagglutinins and trypsin inhibitors.

Cowpeas are susceptible to many insects and diseases, but most can be controlled successfully through the use of resistant cultivars, pesticides, or improved cultural practices. The cowpea curculio is the most serious insect pest in the South. The adults feed on the pod and deposit eggs that develop into small larvae. Other serious insect pests include aphids, corn earworns, cowpea weevils, cutworms, lesser corn stalk borers, Mexican bean beetles, serpentine leaf miners, stink bugs, and thrips. Viral diseases can cause severe problems in many production areas, especially in fall crops. Other serious diseases are damping-off, bacterial canker, Cercospora leaf spot, Fusarium wilt, powdery mildew, and southern blight. Root knot, a disease incited by several species of the root-knot nematode genus *Meloidogyne*, causes economic losses throughout the country.

There are active cowpea research programs in most of the southern states. Efforts are being made to develop more efficient crop management practices for better yield, disease, and weed control and improved plant growth. Superior post harvest handling systems and more efficient nitrogen fixing leguminous symbionts are being developed. Plant breeders are developing cultivars that have higher yields, more resistance to diseases and insects, better suitability for mechanical harvest, and improved nutritional and marketing qualities. Plant geneticists are seeking ways to improve protein quality and photosynthetic and nitrogen fixation efficiencies. The U.S. Department of Agriculture has had an active cowpea improvement program in Charleston, S.C., since 1966. The emphasis in this program is the development of improved horticultural types with resistance to the cowpea curculio, leaf and seedling diseases, and root-knot nematodes.

Cowpeas, which have been a popular table legume in the South for many generations, have, in recent years, gained acceptance nationwide. Today, one can find dry, canned, and frozen blackeye, crowder, and cream types of cowpeas in supermarkets throughout the country. Cowpeas not only increase the diversity of our diet, they have great potential as a supplemental or alternate source of legume protein for the nation’s food supply. Cowpeas are suited for production in many areas with heat and drought stresses too extreme for the successful production of other table legumes.

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