

Peanut

The peanut (*Arachis hypogaea*) is a tropical plant that originated in South America. Peanut is a self-pollinating plant that looks like a yellow-flowered, low sweet pea bush growing slightly higher than 1 foot with a 3-foot spread. After the flowers wither, a flower stalk called a peg elongates and pushes the ovary or pistil of the flower into the soil to a depth of 1 or 2 inches. The pistil then develops into the pod containing the peanuts. At maturity the peanuts are harvested by lifting them out of the ground.

PLANTING

Boiling peanuts need at least 90 to 100 days to reach maturity. Dry peanuts need about 140 days to become fully mature in the Coastal Plain. Plant anytime between April and late June; however, planting after June 1 will not allow enough time for dry peanuts to reach maturity. The ideal time for planting peanuts is the first week of May when the soil is warm and moist. Germination is best between 68 and 95 F.

PLANTING DATES	
Area	Spring
Piedmont	May 1-15
Central	April 15-May 15
Coastal	April 25-May 15

Plant seeds 2 to 3 inches deep in light textured sandy soils and 1½ to 2 inches deep in clay soils. Sow five seeds per foot of row. Space the rows at least 20 inches apart. Twin rows spaced 7 inches apart on 36-inch centers will save space. Keep the soil moist after planting to ensure uniform germination.

VARIETY SELECTION

Three types of peanuts are commonly grown in South Carolina: Virginia, Valencia and Runner. Several different varieties of each type are available. The variety selected should depend on soil type, length of growing season and personal preference.

Virginia types are the best all-around choice for both boiling and roasting. These large-podded peanuts are sometimes called “ballpark” peanuts. Virginia types produce high yields and have excellent flavor.

Valencia types are often boiled because of their distinctive flavor, 3 to 5 seeds per pod, and attractive red seed coats. Valencia types produce smaller kernels and yield less than Virginia types.

Runner types, as the name suggests, have a prostrate or running growth habit. These are the “peanut butter” peanuts that generally are small but have excellent flavor. They contain two medium-sized seeds per pod.

RECOMMENDED CULTIVARS

Any commercially grown variety may be used satisfactorily in the home garden. Suggested varieties for planting in South Carolina are:

- **Runner** – Georgia Green, C-99 R
- **Virginia** – Gregory, NC 7, NC V11, Perry
- **Valencia** – Georgia Red, N. Mexico Valencia A, N. Mexico Valencia C

SOIL

Prepare a deep, loose seedbed for best results. In the fall, chop up any plant debris from the previous crop. Either compost the debris or till it under so it lies several inches below the soil surface where it can break down. In the spring, till the soil to a depth of 8 to 12 inches. Break up any clods and smooth the surface. Expect fewer disease problems if you plant peanuts in areas of the garden preceded by corn in the last one or two years. If at all possible, avoid planting peanuts after beans, peas or similar legume crops.

FERTILIZING

Have the soil tested in fall or early winter. Apply the recommended rate of limestone and work it into the soil two to three months before planting. Peanuts prefer a soil pH between 5.8 and 6.2. Besides raising the soil pH, lime also supplies calcium. However, if the soil is low in calcium as indicated by a soil test, the amount of calcium

contained in lime may not be adequate for maximum production. In this case, additional calcium may be applied as agricultural gypsum.

A calcium deficiency will result in unfilled pods and lowered quality of peanuts. A deficiency will most likely occur on sandy soils during a dry period. All fertilizer, lime and calcium requirements should be determined by a soil test through your local Clemson Extension office.

Peanuts are legumes, which are plants that bear their seed in a pod. In addition, they indirectly obtain nitrogen from the air with the aid of bacteria. *Rhizobium* bacteria live in nodules on the roots and convert nitrogen from the air into a form that can be used by the plants. You can examine these nodules on the roots by pinching them in half with your fingernails. Active nodules are pink to bright red inside.

Sometimes it is necessary to inoculate peanut seed at planting with a bacterial inoculant specifically for peanut. These inoculants are available at seed stores. Yellow-leaved peanut plants growing in a garden that has not been planted in peanuts within the last four years may indicate that the bacterial inoculant had failed. To correct this nitrogen deficiency, apply 3 to 4 pounds of 34-0-0 (ammonium nitrate) per 1,000 square feet.

Peanut plants respond better to residual fertility than to directly applied spring fertilizer. If possible, plant peanuts after a heavily fertilized crop.

If the soil test shows a need for phosphorus and potassium, apply these minerals in the previous fall. In the absence of a soil test, apply 10 pounds of 0-14-14 per 1,000 square feet in the fall. If potash must be applied in the spring, turn it under to a depth of 6 inches to get it below the pod zone. A high concentration of potash in the pod zone will reduce calcium uptake by the pods, resulting in pod rot and “pops” or empty pods.

Peanuts, especially Virginia types, require high levels of calcium to reduce pod rot and increase yield. Apply limestone or gypsum according to soil test recommendations.

Peanuts are extremely sensitive to fertilizer burn. Do not apply fertilizer in the furrow with the seed nor over the row after planting. Instead, broadcast fertilizer over the ground and incorporate it into the soil.

WATERING

Water is the most common limiting factor in peanut production. There are three important periods for maintaining adequate moisture with peanuts:

- At planting to encourage germination.
- From 50 to 100 days after planting as the pegs enter the soil and the pod begins to develop. Water is most critical at this time.
- Pod filling about 100 days until harvest.

Avoid wetting the leaves when watering. Stop irrigating 10 days to two weeks before harvest.

PLANT GROWTH

Under optimum conditions, the peanut plant will begin “cracking” or “emerging” through the soil surface in five to 10 days from planting. The plants usually grow slowly until about 40 days after planting. Growth is more rapid between 40 to 100 days. During this period a four- to five-fold increase in peanut foliage occurs. Peanut plants start flowering about 25 to 40 days after planting. The peanut is unique in that pods and seed that develop from the base of these flowers are produced underground. The flowers originate in the leaf joints or axils (the point where the leaf is attached to the stem) above the ground. When the flower becomes fertilized, the fertilized ovary begins to elongate and bends toward the soil surface. This structure is called the peg and is first visible about one week after fertilizing. About eight to 12 days after pollination, the pegs enter the soil to a depth of 1 to 2 inches. The tip of the peg is sharp, allowing it to penetrate the soil easily. The developing peanut fruit is in the tip of the peg and begins to enlarge soon after entering the soil if water and calcium are present.

When the pegs stop elongating, the peanut fruits or pods enlarge and the seeds mature. Peanut pegs near the taproot that enter the soil early in the season require a shorter period of time to reach maturity than pegs located farther away from the plant.

HARVESTING AND STORAGE

Weather conditions, planting dates and general plant health influence the time required for peanuts to reach optimum maturity. Begin checking for maturity 15 to 20 days before the expected harvest date. Green, boiling peanuts typically mature from 90 to 110 days after planting. Valenica types require a shorter growing season than Virginia types.

Select three or four plants at random from the garden and lift them from the soil, taking care that the pods remain attached to the plant. Remove all pods and break them open. Examine the color of the seed coat and the inside of the hull. Pods that are not filled by the kernel are too

young; pods with a dark internal hull color are overmature. Dig the peanuts when most of the pods are within this range or when you just cannot wait any longer. Some people prefer more mature, firmer boiled peanuts, while others like mushy, less mature kernels.

Dry, roasting peanuts can be harvested in 130 to 150 days after planting or when at least 65 percent of the pods have turned dark inside the hull and the seed coats are pink to red in color. Immature seed coats are white to pale pink.

Another test for maturity is to scrape the middle or “saddle” of the outside of the pod with a knife. The peanuts can be harvested for roasting when 40 percent of the pods have a dark brown to black color in the scraped area. As peanuts mature, the hull color in this scraped-away saddle area changes from white to yellow, orange to brown, and then to black.

If pod stems are weak so that pods come off the plants easily when they are lifted from the soil or if the plants have yellowed up and lost most of their leaves, harvesting should begin at once, regardless of the percentage showing a dark hull or seed coat color.

Peanuts ready for harvest may be dug by loosening the soil around the plants with a shovel or fork. Then lift the plant by hand, shaking all loose soil from the plants and pods. Invert plants with the taproot pointed upwards. Allow pods to partially dry in the sun for about a week. After this initial drying period, remove all pods from the vines and spread them in a cool, dry area for continued curing for two to three weeks. Do not allow peanuts to mold while drying in the garden or in storage. Peanuts can then be bagged in loosely woven containers and hung in a cool, dry area free of insects and rodents. Stored in this manner they may be kept for several months without a significant loss in quality.

PROBLEMS

Pests such as weeds, insects and diseases must be controlled to obtain maximum yields of high-quality peanuts.

Weeds can be controlled naturally with a mulch and by planting in narrow rows so the plants can shade the ground quickly. Hand-weed or carefully hoe or cultivate around the plants. Avoid disturbing the soil beneath the branches of the peanut plant after pegging has begun.

Two classes of insect pests attack peanuts: leaf-feeders and soil-inhabiting insects. Leaf-feeders mainly eat the above-ground portions of the plant. Excessive defoliation by these insects will significantly reduce yields. Soil insects feed on the developing pods below the soil surface and are more difficult to detect and control. Any insect pest should be identified and the extent of injury evaluated before employing control measures.

Peanut leaf spot diseases produce brown to black spots on the leaves. Sometimes the spots are surrounded by a yellow halo. Infected leaves fall off and the entire plant may be completely defoliated before harvest. The occurrence of this disease can be reduced by keeping the leaves dry when irrigating.

In areas outside of the commercial peanut belt, the peanut plant can tolerate a light to moderate leaf spot incidence without the need for control measures and still produce a fair yield of pods. However, fungicides can be applied if necessary to ensure higher yields and better quality peanuts.

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