



Southernpeas

COMMERCIAL VEGETABLE PRODUCTION

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Southernpeas (*Vigna unguiculata*) are also called blackeyed peas, crowders, field peas, cowpeas, or just peas. They are a member of the legume family and are capable of forming nitrogen-fixing nodules on their roots. Southernpeas are, therefore, very beneficial because they add nitrogen to soils when turned under.

FERTILIZATION

Southernpeas can be grown on a wide variety of soils that are well drained and properly prepared. Soil testing should be done before adjusting pH or applying fertilizer to insure optimum amounts. Soil pH should be between 6.0 and 6.5. If the soil pH is below this, lime should be applied according to soil test recommendations. Lime is relatively slow acting; therefore, applications should occur two to three months before planting. Depending on soil type and rainfall, 20 to 50 pounds of nitrogen per acre is needed for southernpea production. Table 1 lists the fertilizer recommendations for Georgia. A typical fertilizer regimen would include 400 to 600 pounds of 4-12-12 or 5-10-10. Fertilizer can be broadcast or banded 3 to 4 inches deep 2 to 3 inches from the seed. Additional nitrogen sidedressings may be needed on sandy soils if the crop is heavily irrigated or if leaching rains occur.

PLANTING DATES

Southernpeas can be planted for spring, summer, and fall production. In the spring, plant after the danger of frost has passed and soil temperatures are 60°F or above. For fall production, seed early enough so that harvesting of the crop can be completed before damaging frost occurs.

SPACING

Between-row spacing should be 20 to 42 inches. Plant bush types at the closer spacing and vining types at the wider spacing. Available equipment will also play a role in choosing row spacing. Bush types (nonvining) should be planted at a rate of four to six seed per foot; vining types should be planted

at one to two seed per foot. Seed size and spacing are factors that will determine the amount of seed required. Small seeded varieties planted at the closest spacing will require approximately 30 pounds of seed. At wider spacings, small seeded varieties will require about 15 pounds of seed. Large seeded varieties will require from 30 to 55 pounds of seed per acre based on whether a wide or narrow spacing is used. Seed should be planted $\frac{3}{4}$ to $1\frac{1}{4}$ inches deep.

VARIETY SELECTION

The processor will prescribe or recommend the varieties you should grow for processing. For fresh market, select consumer acceptable varieties with high yield and disease resistance, if possible. It is always a good practice to buy Western-grown certified seed to insure true-to-type seed with high germination.

Southernpeas come in a variety of seed and pod colors and shapes as well as different growth habits (Table 2). Fresh market peas are classified into cream, crowder, and blackeyed types. Pods may be either green or purple in color at maturity. Crowder peas are generally brown in color and the shape distorted because of crowding in the pod. Creams have white seed at maturity and are generally small. Blackeyed peas are generally white at maturity with black pigment around the point of attachment in the pod, thus the name "blackeye." A variation on the blackeye is the pinkeye type. Pinkeye types are particularly popular for fresh market. There are other less common types with mature pea colors ranging from green to black.

'Mississippi Silver,' 'Colossus,' 'Mississippi Purple,' 'Knuckle Purple Hull,' and 'Hercules' are crowder types. Blackeye peas include 'California #5 Blackeye,' 'Princess Anne,' 'Queen Anne,' 'Magnolia Blackeye,' and 'Genegreen.' The pinkeye derivation includes 'Pinkeye Purple Hull.' Cream types include 'WhiteAcre,' 'Texas Cream 12,' and 'Cream 40.' Those with purple hulls or pods are particularly desirable for fresh market in the pod sales.

WATERING

Although southernpeas can withstand drier conditions than most vegetables, yields can be increased by irrigation whenever rainfall is insufficient. One inch of water every seven to 10 days should be adequate. Heavier soils generally require slightly less water than lighter soils.

WEED CONTROL

Both cultivation and herbicides can be used to control weeds in southernpea production. Plant spacing also can have an impact on weed control. Generally, more closely spaced rows can help with weed control through crop competition. Consult your local county Extension agent or the latest edition of the *Georgia Pest Control Handbook* for recommended herbicides. It is very important to follow label directions because of the potential for crop damage.

DISEASE AND INSECT CONTROL

Diseases

Nematodes are microscopic worms that feed on the roots of plants. They occur most frequently on sandy soils, but most soils can harbor these pathogens. Whenever nematode-susceptible plants are grown in your fields, they can quickly increase nematode populations. Rotation to nonsusceptible crops, particularly grasses and small grains, can dramatically reduce nematode populations. If you suspect nematodes in your field, contact your local county Extension agent, who can help you sample the field to determine if nematodes are a problem. Resistant varieties and/or the use of nematicides can reduce the incidence of this disease. Check with your local county Extension agent or consult the latest edition of the *Georgia Pest Control Handbook* for appropriate nematicides.

Several diseases can affect southernpeas. The following are a list of common pathogens and their symptoms:

Mosaic and Mottle Viruses — Leaves appear crinkled and distorted. The leaves will have light and dark green areas (mosaic pattern). Several viruses (often in combination) are known to infect southernpeas. One such combination of cucumber mosaic virus (CMV) and blackeye cowpea mosaic virus (BICMV) causes a disease called “stunt” in which plant growth is stunted, yields are reduced, and death of plant tissue may occur.

Anthracnose — Stems, leaves, and pods are affected. Dark brown to black sunken areas appear on affected parts. Often a beardlike structure can be seen within these lesions with a hand lens.

Fusarium Wilt — Plants are stunted and leaves of infected plants often are wilted. Stems cut lengthwise at or near the soil surface will show a brown discoloration in the vascular tissue.

Powdery Mildew — A white powdery fungal growth appears on the upper side of the leaves.

Downy Mildew — Yellow spots appear on the upper side of the leaves. The underside of the leaf will have a downy white fungal growth. This pathogen can also affect stems and seed pods.

Cercospora Leaf Spot — Small brown circular lesions with reddish-purple borders appear on leaves. The central portion of the lesion eventually turns gray and may drop out. Plants severely affected may appear ragged or blighted as lesions coalesce.

Insects

Cowpea curculio (listed below) is the most important insect pest of southernpeas. For processing peas, there is essentially zero tolerance for this type of damage. Although there has been extensive research to develop cowpea curculio resistance, there is no adequate control except for frequent use of insecticide sprays. Consult your local county Extension agent or the *Georgia Pest Control Handbook* for appropriate insecticides.

Several insects are common pests on southernpeas. The following is a list of the more common insect pests.

Cowpea Curculio — The adult female of this insect punctures the pea pod and lays eggs, which eventually develop into larvae that feed on the developing seed. These punctured pods often are referred to as being “stung.”

Stink Bugs and Leaf-Footed Bugs — These insects cause damage by inserting their stylets into developing pods and drawing out fluid. Pods are blemished, shriveled, and poorly developed.

Aphids — These insects also can cause damage by sucking plant juices. More importantly, these insects are the primary means of transmitting viral diseases from one plant to another.

Thrips — These pests cause leaf puckering in young plants that can be confused with viral diseases. This damage usually occurs during cool weather, and plants generally recover.

HARVESTING, GRADING, AND PACKING

For fresh market, peas should be harvested 50 to 80 days after planting depending on variety and growing conditions. Pods should be completely filled but not yet beginning to dry. This stage is referred to as the mature green stage. Hand-picked peas usually are harvested several times as the peas reach this level of maturity. Machinery for harvesting southernpeas at the mature green stage is also available. Pods should be graded, eliminating unfilled pods and those with excessive insect damage. Fresh peas often are sold by the bushel unshelled as well as shelled. A bushel of unshelled southernpeas weighs about 30 pounds.

For processing, peas are harvested after the mature green stage in a once-over machine harvest. The processor will determine the stage at which the crop should be harvested.

The USDA sets grades for southernpeas. For fresh market southernpeas, grades are U.S. No. 1 and Commercial. The U.S. No. 1 grade cannot have more than 5 percent of the pods less than 5 inches in length. Pod fill should be adequate for the variety with no more than 5 percent immature. The pods should not be excessively curved or crooked and should appear fresh (not wilted or flabby). Scars, discoloration, dirt, and insect damage should be found on no more than 10 percent of the pods. No more than 5 percent of the pods should have worm holes or curculio stings. Finally, no more than 1 percent of the pods may exhibit decay.

For commercial grade, there is no minimum length. As much as 10 percent of the pods may be immature. Total defects may be as high as 15 percent, with the same tolerance for worm holes and curculio stings as U.S. No. 1 at 5 percent. Decay may be as high as 2 percent.

More detailed information on USDA grades for both fresh and processing southernpeas can be obtained from the USDA Agricultural Marketing Service or from the Internet at www.ams.usda.gov/standards.

Table I. Fertilizer recommendations based on soil test results*

Phosphorus/ Potassium Ratings	Low	Medium	High	Very High
Recommended P	60	40	20	0
Recommended K	60	40	20	0

* Recommendations for nitrogen:
 Coastal Plain — 25 to 50 pounds per acre
 Piedmont, Mountain, and Limestone Valley — 20 to 40 pounds per acre
 P — pounds of P₂O₅ recommended per acre
 K — pounds of K₂O recommended per acre

Table 2. Southernpea types and popular varieties

Type	Variety	Growth Habit	Disease Resistance ¹	
Cream	'White Acre'	Nonvining	Fusarium, Nematode	
	'Texas Cream 12'	Nonvining		
	'Cream 40'	Nonvining		
Crowder	'Mississippi Silver'	Nonvining	Fusarium, Nematodes	
	'Colossus'	Vining		
	'Mississippi Purple'	Nonvining		
	'Knuckle Purple Hull'	Vining		
	'Zipper Cream'	Nonvining		Fusarium, Nematodes
	'Hercules'			
Blackeye	'California #5'	Nonvining	Fusarium, Nematodes	
	'Princess Anne'	Vining		
	'Queen Anne'	Vining		
	'Magnolia'	Nonvining		
	'Genegreen'	Nonvining		

¹ Disease resistance is a relative term based on specific test conditions, to specific races. Results under your specific conditions may vary.

Appreciation is expressed to Wayne McLaurin, Extension Horticulturist; J. Danny Gay, Extension Plant Pathologist; and David Adams, Extension Entomologist, for their contributions to this publication.

