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INSECT PESTS OF BEANS AND SOUTHERN PEAS

Seedling Beans and Peas

Aphids

These insects are soft-bodied "plant lice", about 1/16"-1/8" in length and are usually green although some species are yellow, pink, brown or black. They are most prevalent during cool, dry weather on small plants. Heavy populations of aphids can stunt plants by withdrawing large volumes of plant juices and delaying maturity. Treatments for aphid control should be initiated at any time colonies are found.

Aphids

Thrips

Thrips are small, slender, agile insects, rarely as long as 1/8". They are commonly found in flowers of peas and beans but will also feed on leaves. The presence in flowers at early bloom may result in poor fruit set due to pollination interference by thrips feeding.

Thrips
Photo Source: University of California Statewide Integrated Pest Management Project

Field observations indicate that 3 thrips/flower may interfere with pollination and cause defective-shaped pods. After pods are 1"-2" long, damage is primarily cosmetic since small blisters are generally the only results of their feeding.

Lesser Cornstalk Borer

Lesser Cornstalk Borer
Photo Source: University of Florida

The lesser cornstalk borer is the larval stage of a small (1/2" long) brownish yellow moth. Moths leave field corn when it begins to dry and enter late planted fields of peas and beans. The moths lay eggs around the base of emerging plants. These eggs quickly hatch into larvae which are small, slender caterpillars with green, blue, or brown bands around the body of each segment. The larvae bore into the stalks of young plants near the soil line and tunnel up and down the stalks. A silken tube is usually attached to the entrance hole where the larvae bore into the stem and the larva may sometimes be found in this tube. Plants damaged by lessers become stunted, wither and later die. Late plantings (those made after July 1) on sandy soil during hot, dry conditions often results in 30-50% stand loss.

Major Foliage/Stem Feeders

Several kinds of beetles and caterpillars may be found feeding on foliage of peas and beans. The combined feeding of all or the heavy populations of one species may require insecticide treatments. Peas and beans are fast growing plants with heavy canopy due to an overabundance of leaves. Research has shown that 30% defoliation prior to bloom stage will not result in reduced yield or quality. In addition, these plants can tolerate up to 15% leaf loss during bloom and pod-fill stages without significant drops in yield or quality.

The following pests are considered major foliage feeders and their combined feeding may require treatments to prevent yield and quality loss.

Mexican Bean Beetle

Mexican Bean Beetle

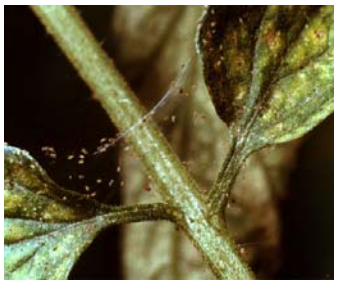
The Mexican bean beetle is 1/4”-1/3" long, very convex and yellow to coppery-brown in color. Each wing cover has eight small, black spots that form 3 rows across the body. Some of the beetles appear at emergence of earliest plantings whereas others may wait for nearly 2 months later to leave their overwintering quarters. After feeding on beans a week or two, the adult female deposits yellow eggs in groups of 20-50 on the undersides of leaves. The eggs hatch in one to two weeks, depending on temperature, and the larvae feed for 2-4 weeks. Both larvae and adults feed on the undersides of leaves leaving the upper surface more or less intact. Larvae also consume regular areas of leaf tissue leaving the veins between them which gives the leaf a skeletonized, lacy appearance. When abundant, larvae and adults will also feed on stems and pods. When full grown, larvae are 1/3" long, yellow and armed with black-tipped spines. Larvae pupate on the undersides of undamaged leaves and emerge as first generation adults in about 10 days. From egg to adult requires about a month and there are usually 3 generations per year. During some years there may be a partial fourth generation. Since most damage occurs during July and August, quick-maturing varieties of green beans planted very early or during late summer may escape damage.

Bean Leaf Beetle

Bean Leaf Beetle
Photo Source: Kansas State University

The bean leaf beetle is rarely a serious problem on beans or peas grown in South Carolina. The adults vary considerably in color and markings, but are typically red to yellow in color, about 1/5” to 1/4" long, with 3 or 4 black spots in a row along the inner edge of each wing cover. Damage caused by bean leaf beetles is twofold: (1) girdling of stems near the soil line and (2) large irregular holes chewed in leaves. Damage to beans and peas early in the season may result in stand reduction.

Spider Mites



Spider Mites

Spider mites are minute, eight-legged animals that are more closely related to spiders than to insects. Adults and immature stages appear as tiny specks on the undersides of leaves where they pierce the epidermis and extract sap. Lightly infested leaves assume a whitish stippling appearance, while heavily infested leaves turn pale yellow or bronze colored and dry up. The undersurfaces of leaves usually are covered with silken webs over which the mites crawl. Spider mites develop rapidly during hot, dry weather and one generation can be completed in as few as 8 days.

Lima Bean Vine Borer

Lima Bean Vine Borer

The lima bean vine borer is an occasional pest of the large-stemmed bean varieties. The mature larva is 7/8" long, bluish green with a tint of pink on its back, and has a yellowish-brown plate behind its dark head. It burrows into stems, typically just above or below nodes, and hollows out cavities. Infested stems swell and form galls which eventually turn brown and develop a woody texture. Infested plants are weakened and have lower yields.

Cabbage Looper

Cabbage Looper

The cabbage looper is another defoliator of peas and to a lesser extent beans. The larva is green in color with a thin white line along each side of the body and two others near the middle of the back. Damage caused by loopers is ragged foliage. They rarely reach treatment status on peas and beans in the absence of other defoliators. Heaviest populations usually occur on late planted crops.

Major Pod Feeders

Cowpea Curculio

The cowpea curculio is the most destructive insect pest of Southern peas grown in South Carolina. Cowpea curculios are rarely a problem on snap beans. Small, brown, wart-like, or blister-like spots are found on pods damaged by curculios. These are caused when the adult punctures the pod to feed or lay eggs. Damaged peas have small, dark, indented spots and often contain grubs.

Cowpea Curculio

The cowpea curculio overwinters as an adult in crop refuse, or grass in the field, or on the border of the field. Tufts of broom sedge, particularly at edges of woods, are favorite hiding places for overwintering adults. The adult is an oval, hump-backed, bronze-tinged, black “snout” beetle that has small dents on the wing covers and on the upper side of the body. It is about 1/4" long. Adults begin to leave their winter quarters in March or early April. This emergence continues until June or July or about the time that the first peas are available for egg-laying. These overwintering adults are long-lived and may survive through August.

Eggs are laid as soon as peas are formed in the pods. The weevil, or “snout” beetle, punctures the pod and chews a small hole in the surface of the pea. In this hole is laid a single egg. From this a legless, pale yellow, brown-headed grub hatches.

The grub feeds on one or more peas before it reaches its full size of slightly more than 1/4" long. It then chews an exit hole through the pod, drops to the ground, and pupates about 1" into the soil. Approximately 7 or 8 days elapse from the time that the eggs are laid until the grubs emerge from the pod. The larvae pupate about 6 days after they leave the pod. About a month is required to complete the life cycle. There are two generations each year. Because eggs are laid over an extended period of time, generations overlap and all stages can be present on southern peas at the same time.

Late southern peas isolated from early peas are usually not as severely damaged as early peas. Wild host plants produce pods that attract many curculios, and these can be a source of infestation.

The only feasible approach to control of curculios is a preventive spray program. The current spray schedule recommended begins with a spray at first bloom and repeat treatments made on a 5-7 day schedule.

Corn Earworm

Corn Earworm

The corn earworm is primarily a problem on late-planted peas and beans but early plantings may also be attacked. These worms vary greatly in color from a light green or pink to brown or nearly black and are lighter on the underparts. They are marked with alternating light and dark stripes running lengthwise on the body. The head is yellow and unspotted, and the legs are dark or nearly black. The corn earworm chews holes in both foliage and pods but prefers the latter. Levels requiring insecticide treatment are 5% damaged pods or 1 larva/3 feet of row.

Tarnished Plant Bug

Tarnished Plant Bug

Photo source: Cornell University and the New York State IPM Program.

The tarnished plant bug is a pest of snap and lima beans but rarely reaches pest status on southern peas. The bean growth period during which plant bugs are most important is full-bloom. The bugs withdraw plant sap and inject toxic saliva into the plant. The toxins may cause bloom and young pod abortion and dark spots to develop on older pods that are attacked.

Adult bugs are about 1/4" long, by less than half as broad, flattened, oval in outline, a general brown color mottled with small, irregular patches of white, yellow, reddish-brown or black. Nymphs are similar in shape to adults with 4 black spots on the thorax. By late summer, adults and nymphs are numerous but because of their obscure coloration and shy hiding habits, are not much noticed. Late planted beans are highly susceptible to attack and should be checked closely during the bloom stage. Treatments for bugs should be made when there is an average of 1 bug/6 ft. or row.

Stink Bugs

Southern Green Stink Bug

The Southern green stink bug is a serious pest of lima beans and snap beans during late summer and fall. These bugs are shield-shaped, bright green, bad-smelling, flattened and about 5/8" long. The young (nymphs) are similar in shape and have black markings. Stink bugs damage beans in both the nymph and adult stages by withdrawing juices and injecting toxins. Although they may feed on leaves, pods are preferred. External signs of stink bug feeding on pods of snap beans show up as clear or water-soaked lesions. On lima beans, the external damage on pods is not as clear. But developing beans become brown after bugs inject toxins and introduce yeast infections.

On snap beans, insecticide treatment is necessary during bloom stage when there is an average of 1 bug/10 feet of row. Lima beans are more sensitive to damage and insecticide treatment is needed in the bloom stage when there is an average of 1 bug/15 feet of row.

Control of Insect Pests of Beans and Southern Peas

Consult the discussion under each pest listed on this fact sheet for the “economic threshold” or the level of pest populations or plant injury necessary to warrant control measures.

Several insecticides are labeled for control of stink bugs, tarnished plant bugs, cowpea curculios, bean beetles, thrips, and aphids, as well as for control of caterpillars and bean beetles. To control spider mites, a miticide is needed. To effectively control mites, two applications are needed, 5 days apart.

Always follow all label directions and observe waiting periods until harvest.

Check with your local County Extension Agent for specific insecticide recommendations.

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