



Snap Bean Insect Pests

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Seed corn maggots overwinter as small brown pupae in the soil. **(1, inset)** The adult flies (¼-inch long, dusty-brown color) emerge in mid-to late-May. They are attracted to soils which are high in decomposing organic matter such as plowed down winter cover crops or animal manure. The eggs are laid on, or just under, the soil surface and hatch in a few days. The maggots begin to feed on the decomposing organic matter in the soil. **(1)** Seeds planted in such soils are frequently attacked before they sprout or shortly thereafter. This causes substantial loss in stand. There are 3 or more generations per year. The generations emerging after late June are of less importance since most annual plants are well established by this time.

(2) Bean leaf hoppers (⅛-inch long, light-green color) which attack snap beans do not overwinter in Michigan. They migrate into Michigan on storm fronts, usually in late May and increase in numbers through successive generations of around 20 days. The adults and nymphs attack the underside of the leaves where they suck the sap, causing the **(3)** leaves to curl and turn yellow and reddish brown in a mosaic-like pattern. The damage results from loss of sap and a plant response to the insect's saliva. The plants are stunted and yields are reduced.

(4) Tarnished plant bugs (¼-inch long, brownish color) overwinter as adults under trash in fence rows, wood-lots, and similar protected areas. They emerge in the early

spring and begin feeding on grasses and alfalfa hay. There are 3 to 5 generations of 3-4 weeks each per year. Adults and nymphs feed by sucking sap from the leaves and stems. Often, the flowers, buds, and pods are attacked, causing them to drop off, thus reducing the yield and/or quality. Bean fields adjacent to hay fields are often heavily invaded when the hay is cut.

European corn borers overwinter as larvae in corn stalks. **(5)** Adult moths emerge in late May and begin laying eggs. **(6)** The eggs hatch in about 4 days and the **(7)** larvae bore directly into the stems and/or pods. The damage results in loss in yield when stem boring occurs **(8, left: hole in stem, enlarged; 8, right: flagging leaves)** but more importantly, **(9)** larvae in the pod represent loss in quality and contamination of the processed product. There are two generations per year. The first generation adult flight activity usually peaks between June 10 to 20 and the second generation usually peaks between August 15 to 25.

(10) Mexican bean beetles (1/3-inch long, orange with black spots) overwinter as adults in fence rows, woodlots, and similar protected places. They emerge in late May and attack the young bean plants. The orange-yellow eggs are laid on the underside of the leaves and the young larvae begin feeding on the leaves similarly to the adults. The damage is a skeletonization of the leaves. There may be up to 3 generations (of one month each) per year. Damage from this pest is very sporadic both from year to year as well as within any given field.

(11) Bean aphids (1/16-inch long, black color) overwinter as eggs. The eggs hatch in early spring and the aphids migrate into the bean fields. Since these adults are all females, capable of reproducing 80 to 100 nymphs, the population builds up extremely fast. Generation time is 7 to 10 days. Damage results from loss of plant sap which results in stunted plants and reduced yields. In addition, the aphids transmit (spread) bean mosaic virus disease which further stunts the plants and reduces the yield. Bean mosaic looks very similar to leaf hopper damage.

(12) Green cloverworms overwinter as pupae or adults. They emerge in late-spring, mate and lay their eggs singly on the underside of the leaves. The ensuing larvae feed for about 4 weeks. Note the white strip along the side and 3 pairs of legs in the mid-section of the larvae. There are two generations of around 6 weeks each per year. Infestations on snap beans begin in late-June. The larvae chew large holes in the leaves and attack the pods. This damage reduces yield and quality.

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For chemical control recommendations, homeowners should consult Extension Bulletin E-760(b), "Home Vegetable Garden Insect and Disease Control." Single copies are free to Michigan residents from your County Cooperative Extension Office or you may write to the Michigan State University Bulletin office, P.O. Box 231, East Lansing, MI 48824.

Cooperative Extension Service
Michigan State University

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1) Seed corn maggot (inset—adult) & maggot damage to beans



2) Bean leafhopper adult—left; immatures—right



3) "Hopper burn" damage by leafhoppers



4) Tarnished plant bug on bean blossom



5) European corn borer—adults



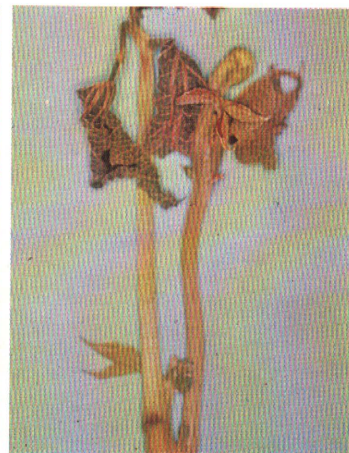
6) European corn borer—egg mass (on pep)



7) Full-grown European corn borer larvae



8) European corn borer entry hole (arrow) in bean stem—left; "Flagged" leaves indicate borer in stem—right



9) European corn borer entry hole in pod



10) Mexican bean beetle—adult, left; larvae, right



11) Black bean aphids



12) Green cloverworm on bean pods