

Bean Leaf Beetles in Home Gardens

Kathleen Bennett, Department of Horticultural Science
Jeffrey Hahn, Department of Entomology

The bean leaf beetle, *Cerotoma trifurcata*, is an occasional pest of snap beans (formerly called string beans or green beans) in home gardens in Minnesota. It is also found on soybeans, clover, dry edible beans, and several leguminous weeds. High numbers in recent years have been attributed to milder winters or adequate snow cover that insulated and protected overwintering adult populations. Bean leaf beetles are generally more common in southern Minnesota than in the northern part of the state.

Identification

Bean leaf beetle adults are about ¼ inch long, oval-shaped insects. Their heads are visible from above. Most bean leaf beetles in Minnesota are yellowish-green with four black spots and black markings along the outside margins of the wings. However, you may also find individuals that are red and some that lack spots. Despite these differences in coloration, you can always recognize a bean leaf beetle by the black triangle at the top of its wing covers.



Figure 1. Bean Leaf Beetle. *Kathleen Bennett*

Biology and Life Cycle

Adult bean leaf beetles overwinter in the soil under leaves (especially in wooded areas), in clumps of grass, or inside dried curled leaves in leaf litter. Overwintering beetles emerge from mid-May to early June. They feed first, then mate. Females lay clusters of about 12 orange eggs in the soil around the base of the beans. Eggs hatch into larvae one to three weeks later, depending on temperature.

White larvae feed on the bean roots. Despite this feeding, they are not known to seriously damage plants. They feed for about two to three weeks and then pupate in the soil in earthen cells. Adults emerge from mid-July through August. There is typically only one generation per year in Minnesota, although two generations can occur in the southern part of the state. When this happens, the first generation appears in July and the second generation appears in late August and September.

Damage

Adult bean leaf beetles prefer to eat tender young plant tissue. They feed primarily on the undersides of leaves, creating round, 1/8 inch diameter holes. High populations of adults can defoliate the first true leaves and kill young seedlings. Extensive feeding can reduce the vigor and yields of bean plants.

IN PARTNERSHIP...

When pods form later in the season, adults will also feed on their outer surface, but usually this just results in cosmetic damage. Although bean leaf beetles are known to carry and spread some plant diseases, this is generally not an issue in home gardens as most snap bean varieties are not considered susceptible to those diseases.

Management

If you have experienced bean leaf beetle infestations in the past, it is important to monitor your garden for their presence, as they are not necessarily numerous enough to be considered a pest every season. If you have never found bean leaf beetles in your garden, or have found them only infrequently, it's less important to watch for them. The best time to look for these beetles is in the afternoon between 12:00 and 4:00. It's especially critical to inspect your plants early in the season when they're more susceptible to feeding injury.

Be on the lookout not only for the presence of bean leaf beetle adults, but also for their feeding damage. If you find moderate or severe injury (about 25% defoliation) on 10% or more of your plants, you should protect your snap beans, especially after the first set of true leaves is present. As snap beans grow larger and develop more leaves, they become more tolerant of defoliation.

Cultural

You can minimize the risk of bean leaf damage in spring by delaying the planting time of your snap beans. In southern Minnesota, plant in early to mid-June to help you escape most of the damage by overwintering adults. Plant correspondingly later if you are in central or northern Minnesota. Snap beans take about 60 days to grow. You can plant them as late as mid-July (southern Minnesota) to the end of June (northern Minnesota).

Physical

You can handpick bean leaf beetles in your garden to reduce their numbers. Drop them into a pail of soapy water to kill them. Be careful, as bean leaf beetles often drop to the ground when plants are disturbed. You may want to position the pail underneath the plant to catch any that fall. Physical removal may not be practical in larger gardens.

Insecticides

If necessary, spray your snap beans with an insecticide to protect them from bean leaf beetles. Be sure that bean leaf beetles are present and they are numerous enough to justify treatment. It is less necessary to treat bean leaf beetles later in the summer.

There are several insecticides that are effective against bean leaf beetles, including esfenvalerate, permethrin, or carbaryl. Read the label carefully to be certain that the particular product you would like to spray is registered for use on beans.