

Controlling Bean Leaf Damage by Beetles

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With the supply of commercial canned goods, such as beans, peas, tomatoes, and corn limited, victory gardeners and farmers should plan to grow more of these crops. Of the various garden crops, beans—both green and dried—are among the most important and every effort should be made by the grower to protect the crop from injury by insects and plant diseases. There are a number of harmful insects which attack garden and field beans, but, in recent years, the two which have attracted most attention and caused most damage, especially in gardens, are (1) the bean leaf beetle and (2) the Mexican bean beetle. The first of these is now generally distributed over most of Missouri and is the pest which eats numerous holes in the leaves. The latter species has only recently crossed the Mississippi River and now is seriously threatening bean growing in the eastern counties of the state from St. Louis south.

Bean Leaf Beetle.—This small beetle somewhat resembles the spotted cucumber beetle, but is smaller and reddish-yellow in color with black spots rather than greenish-yellow with black spots. It feeds largely on the lower surface of the bean leaves, eating holes in the leaves. When abundant, they are not difficult to find and frequently so much of the leaves are eaten that the crop may be ruined. As a rule, they begin to attack beans soon after they come up, when a few beetles may destroy the crop. While the beetles eat holes in the leaves, the small, whitish grubs feed on the roots and stems of the bean plants below ground, often seriously damaging the crop. Most of the damage by this pest is done early in the summer, though there may be a second generation in the south part of the state. The winter is spent in the small beetle stage in protected places in and near the garden. Naturally, such harboring places should be cleaned up during the winter.

Mexican Bean Beetle.—This beetle belongs to the large family of beneficial lady beetles, but it is a black sheep, for in place of feeding

on plant lice and other harmful insect pests it has turned to the foliage of beans and other legumes for food. Fortunately, it has been in Missouri for only a few years and, as yet, has invaded only a few counties on the east side of the state from St. Louis south. However, in many localities it has already become so abundant that it is threatening the bean crop. Bush beans, vining beans, limas, and to a less extent field beans and soybeans are attacked. Many growers in the St. Louis area have reported complete loss of garden plantings.

This serious bean pest, for years, was restricted to the southwestern part of the United States and Mexico, but all of a sudden it appeared in Alabama and from there rapidly migrated north and west, arriving in Missouri in the last five or six years. The beetle, as well as the small, yellowish, spiny grub, feeds on the leaves of beans. Unlike the bean leaf beetle it feeds largely by simply gnawing away the green under surface of the leaves, which causes them to dry out and appear as a fine network of veins. When the infestation is heavy they may also feed on the green pods and destroy the foliage faster than new leaves develop.

In Missouri, the pest spends the winter in the beetle stage hidden away in litter about the garden. After beans begin to develop the small overwintering yellowish to copper-colored beetles with black spots begin feeding on the leaves. Later, they lay small packets of eggs which soon hatch into small yellowish grubs which are well protected with spines. The pest has a partial second generation each summer in Missouri and, as the season advances, all stages of development—eggs, larvae, pupae and adults—may be found on the same plants.

Control.—To control these two bean pests, the grower should dispose of infested plants as soon as the crop has been gathered, and in the winter all crop residues and other litter in and about the garden should be disposed of or, better still, worked into compost. This will help to reduce the abundance of these pests. Hand destruction of the pests when they begin to attack the crop may also help in small garden plantings. However, to properly protect the crop the grower must resort to the careful use of insecticides.

To control heavy infestations of these two destructive bean beetles the grower should apply one of the following poison sprays or dusts every week, beginning as soon as the beetles appear: (1) Magnesium arsenate, 1 tablespoonful; water, 1 gallon, (2) Magnesium arsenate, 1 pound, hydrated lime, 4 pounds; (3) Calcium arsenate, 1 pound, hydrated lime, 9 pounds, or (4) Cryolite, applied as spray or dust as directed by the manufacturers. In applying sprays or dusts be sure to cover the lower surface of the foliage where the beetles feed mostly. Where infestations are heavy late planted beans suffer less and bush beans are less difficult to protect with sprays and dusts. *Do not use lead arsenate on beans as it tends to dwarf the crop.*