

# VEGETABLE CROPS

## INSECTS OF BEANS Mexican Bean Beetle

Cooperative Extension New York State Cornell University

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### mexican bean beetle

*Epilachna varivestis* Mulsant

#### Introduction

For the past century the Mexican bean beetle has been a pest in the United States. Until 1920, when it was discovered in northern Alabama, it was a more or less serious bean pest in the western part of the United States from Colorado southward. This important bean pest reached New York about 1927 and by 1938 all of the states east of the Mississippi River except Wisconsin were known to be infested.

The Mexican bean beetle, also known as the bean lady beetle, is a member of the lady beetle family, the majority of which are considered beneficial as they feed on other insects. This insect, however, is a pest of garden and field

beans, cowpeas, and soybeans. This pest survives the cold northern winters by hibernating as an adult beetle.

#### Adults

The adult Mexican bean beetle is about 1/4 inch (6 mm) long, (fig. 1), very convex and short ovate in form. It varies in color from yellow when newly emerged from the pupal stage to a coppery-brown when mature or in the overwintering stage. Each wing cover has eight black dots in three rows across the back when the wings are at rest. When disturbed, the adults fall from the plant and exude a yellow liquid from their leg joints. The adult beetles pass the winter under trash and other ground cover along hedgerows and in similar protected places. Beetles return to the bean fields from overwintering quarters in June to feed and lay eggs for a new generation. There are two generations a year.

Actual Size



Egg



Larva



Pupa



Adult



## Eggs

After feeding 1-2 weeks on the preferred host crop of beans, the adults deposit eggs on the underside of the leaves. The eggs (fig. 2) are about 1/20 inch (1.2 mm) long, orange-yellow in color and fastened on end in groups of 40-50 or more. The eggs hatch in 5-14 days depending on temperature.

## Larvae

The larvae are yellow in color and the body is covered with six rows of long, black-tipped spines. The larval stage lasts for 2-5 weeks; when full grown the larvae or grubs are 1/3 inch (8 mm) long (fig. 3). Pupation takes place on the bean leaves.

## Pupae

The pupa is orange in color and is attached to the leaf by the old larval skin (fig. 1). The adult emerges in approximately 10 days. The total period of development from egg to adult averages 33 days under midsummer conditions.

## Damage

All kinds of garden and field beans as well as soybeans and cowpeas are attacked. Both the adult (fig. 4) and larva feed almost exclusively on the undersurface of the leaves of these host crops causing serious damage in years when extensive outbreaks occur. Infestations vary greatly in the same area due to weather and other factors. Heavy infestations are usually associated with somewhat cool, moist conditions. Hot dry weather suppresses development of this pest. Because there are two generations a season, there are two peak periods of injury during the growing season. The first is caused by feeding of the larvae (fig. 3) during the

month of July and the next is in late August from second generation larvae.

The larvae eat out irregular shaped areas leaving slender parallel strips of untouched leaf between them, giving the plant a characteristic lace-like appearance not easily confused with other insect injury. Yields are reduced from damaged plants.

## Control

An imported parasite (*Pebiobus foveolatus*) has been used successfully in the bean area of the mid-Atlantic coastal states. This parasite does not overwinter successfully so must be maintained in the greenhouse during the winter. In the spring, early planted trap crops are used to attract the overwintered Mexican bean beetles to the field where parasites are re-introduced for seasonal suppression.

Other naturally occurring control organisms are present in the field and help to reduce the pest population.

Consult your local extension recommendations to determine which pest management practices are most effective in your area.

## Evaluating Populations

The adult beetles migrate into bean fields for a period of several weeks, the first ones appearing on beans soon after they are up. Monitor bean fields by scouting first for adult beetles, then eggs, and finally larvae. Because all stages are easily seen and recognized, this pest is not a difficult one to monitor. However, because populations vary both within a bean field and between fields in an area, it is difficult to decide when population numbers present a threat. Weather, as mentioned above, plays an important role in the dynamics of bean beetle populations.

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### Quantity Discount Available

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Written by A. A. Muka

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