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The Mexican bean beetle, *Epilachna varivestis* Mulsant, is a serious pest of beans in the mid-Atlantic region. Both larvae and adults feed on bean leaves causing significant damage and reducing yields. MBB may be reduced to non-damaging levels through inoculative releases of the parasitic wasp, *Pediobius foveolatus*.

Parris N. Glendening, *Governor*  
Kathleen Kennedy Townsend, *Lt. Governor*  
Dr. Henry A. Virts, *Secretary of Agriculture*  
Hagner R. Mister, *Deputy Secretary*

MDA 314-99

## USING THE PARASITIC WASP

### *PEDIOBIUS FOVEOLATUS*

## TO SUPPRESS MEXICAN BEAN BEETLES IN HOME GARDENS

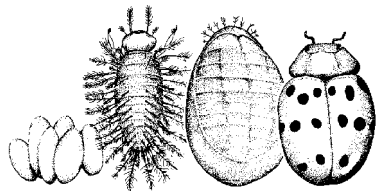




## The Mexican Bean Beetle

### Appearance and Life History:

The Mexican bean beetle (MBB) overwinters as adults. Adults look like and are closely related to lady-bugs. They are copper colored with 16 black spots. Overwintered adults can be found on young beans as soon as they emerge in the spring. Yellow eggs are laid in groups on leaves and hatch in 5-14 days. Bright yellow, soft-bodied, spiny larvae develop in two to three weeks. When larval development is complete, the larva attaches itself to a leaf and "pupates" or enters a resting state. After seven to ten days, a new adult emerges. There are usually two generations of MBB in the Mid-Atlantic region.



eggs larva pupa adult

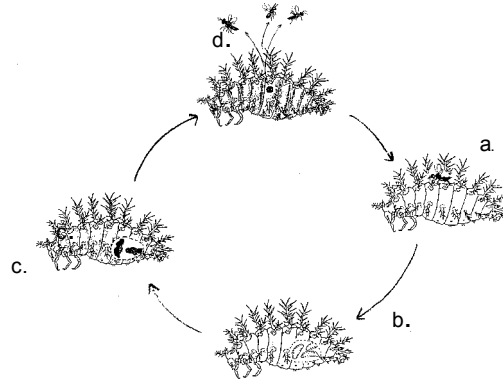
### Damage:

MBB adults and larvae feed on bean leaves causing a "lacing" effect. Adults chew all the way through the leaves, while larvae scrape the upper surface, leaving a layer of leaf tissue where they have fed. Lima beans are preferred, but MBB will feed on many different beans including snap beans, soybeans, and shelling beans.

## *Pediobius foveolatus*

### Background:

*Pediobius foveolatus* is a larval parasitoid of MBB. Originally from India, this small wasp cannot survive freezing temperatures and must be maintained in laboratory colonies through the winter months. Programs which control MBB on soybeans using releases of *P. foveolatus* have been successful in the Mid-Atlantic area. Release strategies in small, successive, fresh-market bean plantings are considerably different and are the focus of this brochure.



### Appearance and Life History:

*P. foveolatus* is a small black wasp. Female wasps lay eggs inside MBB larvae (a.) Wasp larvae hatch and eat the inside of the MBB larva causing death (b, c). Adult wasps make an emergence hole in the "mummy", or parasitized MBB larva, and fly away to start another generation (d).

### Parasite Care:

Parasites may be shipped as pupae in the mummies or as adults. Adult wasps that cannot be released immediately should be kept cool and shaded. A cooler with an ice pack is an excellent choice. Do not let the parasite container come in direct contact with the ice pack. Refer to package enclosure for specific care instructions.



**PROTECT PARASITES  
FROM EXTREMES OF HEAT  
AND COLD.**

## Parasite Release

**TIMING IS CRITICAL! Order parasites as soon as MBB larvae begin to hatch.** Parasitized larvae do not stop eating immediately. To minimize damage to the bean crop, larvae should be parasitized when they are young.

Take the parasite container to the infested area of beans, open it and place it under the bean leaves. Time of day is not critical, but do not release during or before heavy rainfall. If the parasites have not yet emerged from the mummies, put the container above the ground in the bean canopy, to protect the mummies from predators.

After about a week, the yellow Mexican bean beetle larvae that have been parasitized will begin to turn brown and can be seen attached to the bean leaves. New adult parasites will emerge from these "mummies" in 10 to 14 days, ready to parasitize more Mexican bean beetle larvae, protecting subsequent bean plantings.

### COMMONLY-ASKED QUESTIONS:

**Q: Can this wasp harm humans?**

**A:** Absolutely not! This small parasite can only harm larvae of the Mexican bean beetle. The adult wasps feed harmlessly on plant nectar.

**Q: Will the wasp become a pest itself?**

**A:** No. The wasp will only "sting" Mexican bean beetle larvae. It does not parasitize any beneficial insects. In addition, the wasp is tropical and is not known to survive North American winters.

**Q: How will I know the wasp is working?**

**A:** The presence of brown, parasitized mummies indicates that the wasps are working. Yellow MBB larvae can also be broken open to check for white, maggot-like wasp larvae inside.