

Technical Bulletin #84:

Integrated Pest Management – Types of Insect Larvae

Insects that are pest in their larval stage belong to one of three different groups: Lepidoptera (moths and butterflies), Coleoptera (beetles) and Diptera (flies). It is important to distinguish between the different types of larvae in order to choose the correct pest management strategy.

Lepidoptera larvae can be easily killed manually or with the use of very specific insecticides with a green label, such as Bts or Dipel, which will not damage other organisms. Coleoptera larvae can only be killed using broad spectrum insecticides that have a red label, and normally harm beneficial insects and other organisms. Diptera larvae are not exposed and are not easily killed by insecticides. Leaf miner larvae can be killed using very specific insecticides. Fruit fly larvae are protected inside fruit and can only be killed by destroying the affected fruit.



Beetle (Coleoptera)



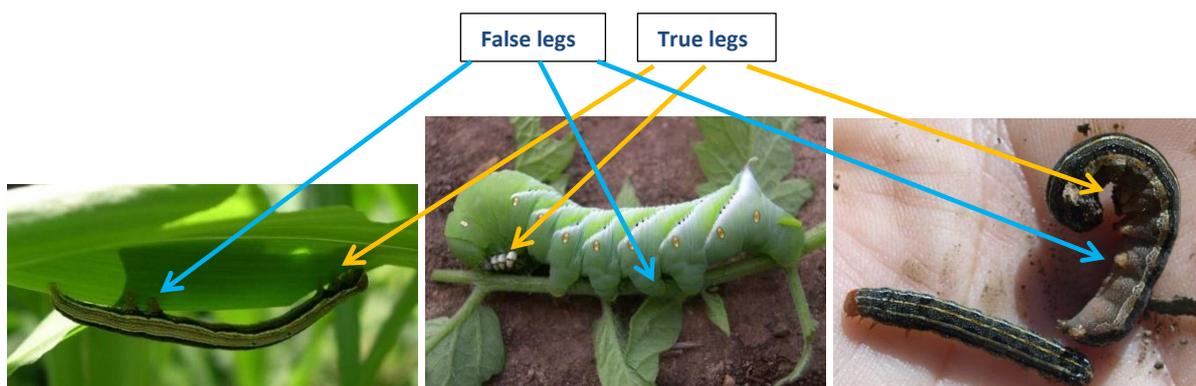
**Moth or nocturnal butterfly
(Lepidoptera)**



Fruit fly (Diptera)

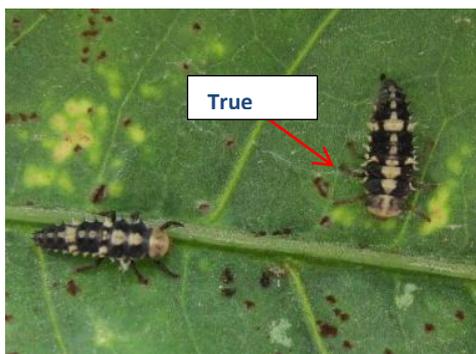
Characteristics of Lepidoptera (Butterfly) Larvae:

1. Butterfly or Lepidoptera larvae can be foliar pests, borers, such as stem borers, fruit borers, or cutters.
2. Larvae are normally elongated, soft bodied and have a notorious head with chewing mouthparts.
3. They always have three pairs of true legs, with joints, next to the head. These legs will become the insect's legs in the adult stage.
4. They have false legs on the underside of the body to help them walk.



Characteristics of Coleoptera (Beetle) Larvae:

1. Beetle or Coleoptera larvae can be foliar pests, fruit, stem or root borers, or soil pests grubs.
2. Beetles larvae is diverse. Beetles may all have different shapes, but regardless of the shape, they have a notorious head with chewing mouthparts.
3. They usually have three pairs of true legs next to the head. Larvae do not need to walk in order to feed.
4. They never have false legs. This characteristic makes them different from Lepidoptera larvae.



Characteristics of Diptera (Fly) Larvae:

1. Diptera larvae that are pests can be either foliar pests or fruit borers.
2. Diptera larvae resemble rice grains and have no defined head. They may be whitish in color, like most fruit flies, or small and yellow, like the leaf miner larva.
3. They do not have legs.



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