



Three-Lined Potato Beetle

Dr. Alan T. Eaton, Extension Specialist, Entomology

Three-lined potato beetles are found on plants in the family *Solanaceae*, including potato, tomato and relatives. They are uncommon on potato, rare on tomato, but very common on tomatillo (*Physalis ixocarpa*). Adults are 7-8 mm long (1/4 inch) orange-yellow, with three lengthwise black stripes. The females lay orange-yellow eggs in groups, usually on the undersides of leaves, by veins.

The larvae hatch in late June or July, and look a bit like slugs with legs and black heads. They tend to stay in groups as they feed, rather than feeding individually. They cover themselves with their own excrement, probably as a defense to being eaten. After the first generation has completed its development, a second generation appears in August. Both the larvae and the adults chew on foliage. On potato and tomato the injury is usually minor, but injury can be severe on tomatillo.

Research in Connecticut (published in 1918) stated that the insect overwinters in the pupa stage, in the soil. Research in southern California (published 1970) concluded that they overwinter there as adults. I assume the Connecticut work is representative for New Hampshire, so crop rotation may assist in reducing problems.

Controls

Eliminating nearby weeds in the potato family can help reduce the problem, especially *Physalis*, which is called husk tomato or groundcherry. Spunbonded row covers or other netting material can be helpful to exclude the beetles, provided they are placed before the beetles arrive, and you have rotated crops. Handpicking is usually sufficient for control on tomato and potato, but can be challenging for heavily infested tomatillos. There are a number of garden pesticides that will control them. Pesticides certified for use on organic farms probably are not as effective as other chemical pesticides. The larvae may be easier to control than the adults, if you get good spray coverage on the undersides of leaves. Listing specific products is nearly impossible, because they change so rapidly, and there are thousands to review. For people who do not have a NH pesticide applicators license (most backyard growers), three-lined potato beetle AND crop you wish to treat must both appear on the label. Some products by have wording that includes many species without specifically naming them.

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Three-lined potato beetle larvae



Three-lined potato beetle eggs

- Examples:
- 1) insects such as, but not limited to...
 - 2) beetles...
 - 3) chewing insects...
 - 4) vegetable crops such as, but not limited to...

Ingredients that may be labeled and effective include carbaryl, permethrin, bifenthrin, neem, pyrethrins (not likely to be effective in very low concentrations), and soaps.

Naming: Several scientific names appear in the literature for this species. This is in part due to confusion in naming, and revising the group in which this species resides. The correct name is *Lema daturaphila* Kogan & Goeden. The name suggests an affinity to *Datura*, a genus of plants in the solanaceae, which includes jimsonweed (rare in NH). Other (older, now incorrect) names you may find in references include *Lema trilinea* and *Lema trilineata*. So if you find a reference that lists Threelined potato beetle, and gives another scientific name, that is the same critter. Some people refer to this species as “old fashioned potato beetle” but that name is sometimes applied to other species, so not as reliable.

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