

# Colorado Potato Beetle

(Coleoptera, Chrysomelidae)  
(*Leptinotarsa decemlineata* (Say))

## **Description:**

*Immature stages* – The eggs are orange, elongated, and occur in clusters of 20-60 eggs. The larvae are reddish and black and very plump. Two rows of black spots occur on each side of the abdomen. Both stages occur on the leaves of tomato or potato where they complete their development to the pupal stage. Larvae drop to the soil, burrow into the top of the soil, and pupate in a small cell.

*Adult stages* – The adult beetles are light tan to dark brown, stout, and oval in shape when viewed from above. The forewings have five longitudinal black lines on each side with light tan lines in between. The head is orange and brown with a triangular black spot. Adult beetles may, however, be visually confused with *L. juncta*, the false potato beetle, which is not an agricultural pest. *L. juncta* also has alternating black and white strips on its back, but one of the white strips in the center of each wing cover is missing and replaced by a light brown strip.

## **Biology:**

*Life Cycle* – Adults overwinter by digging into the soil to a depth of several inches and emerge in the spring. They feed on newly sprouted host plants where they mate. Females deposit eggs on the underside of leaves. Eggs hatch in 4-10 days. There are four instars of larvae, which feed continuously on the leaves of host plants. Under very warm conditions the total development time can be as short as one month. There are 1-3 generations per year.

## **Damage to Crop:**

CPB is the major defoliator of potatoes and eggplant where they occur. It has been observed occasionally feeding on tomato in Georgia. In potatoes, most of the control programs protect the early to mid-season growth of the plant, and, in general, defoliation should not exceed 25% during this period. Populations of 0.5 beetles per plant have been shown to reduce tomato yields where they occur.

## **Management:**

CPB is a sporadic pest in the piedmont region, so it is critical to scout the crop to determine if the beetles are even present. In areas where greater than 0.5 beetles per plant or greater than 10% defoliation occurs, foliar applications of insecticides are typically used. Because these beetles do not disperse very well, the most valuable practice for cultural control of this beetle is crop rotation and separation of new fields from old infested crops by at least a half kilometer. The trench method is a semi-successful mechanical control of CPB mostly applicable to small acreage. In areas where close rotations are used or host plants are grown adjacent to last year's host crop, this method



Egg mass



Larval stage



Adults feeding on foliage



may help to alleviate first generation CPB damage. A trench is plowed between overwintering sites and this year's potato field. The trench should be at least 12 inches deep with sides sloping 45 to 90°. Emerging beetles walk to find their early season hosts and become trapped in the trench. While many natural enemies have been identified, they are usually not able to control Colorado potato beetle populations below the necessary levels. Among these natural enemies are predators such as green lacewings, several predatory stink bugs and the spined soldier bug. *Beauveria bassiana* has been used for microbial control as well as Entomopathogenic nematodes to kill larvae as they pupate. Some strains of the bacterium *Bacillus thuringiensis* are effective but it must be applied to the first two instars to be effective.



Damage

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False Colorado Potato Beetle  
(*Leptinotarsa juncta*)

Two inner white strips of wing covers are replaced by two light brown strips.