Pacific Northwest
Vegetable Extension Group

Identification & Management of Emerging Vegetable Problems in the Pacific Northwest

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Blister Beetles

Affected plant species:
This is an occasional pest in potato, tomato, corn, carrot, melon, pea, bean, cabbage and beet as well as alfalfa, clover and ornamentals.

Common name of the causal organism:
Blister beetle

Latin binomial:
Epicauta pruinosa and other *Epicauta* spp.

Symptoms & key characteristics for identification:
Adult blister beetles have chewing mouthparts and tend to congregate and feed in swarms on host plants. Blister beetles can defoliate host plants, leaving nothing but leaf petioles and stems. This defoliation tends to be limited to perimeter rows of vegetable crops adjacent to native habitat or rangeland.

Adult blister beetles have narrow and elongate bodies ranging from 0.25 to 0.50 inches (7 to 14 mm) long that are soft and flexible. Often the pronotum (when viewed dorsally, the pronotum is the segment lying between head and abdomen) is narrower than either the head or the abdomen. The adult beetles vary in color from black with a metallic sheen to gray with or without dark spots.

  

Biology/epidemiology:
Blister beetles in the genus *Epicauta* have a complex life cycle that makes them highly effective biological control agents of grasshoppers. After feeding and mating in late summer, adult blister beetles lay eggs in areas of rangeland that also serve as breeding grounds for grasshoppers. After hatching from eggs, the highly mobile larvae seek out and feed on grasshopper eggs. Throughout autumn and winter, maturing larvae become less mobile, more grub-like in appearance, and develop a larger appetite for grasshopper eggs. Eventually, the larvae complete their development and pupate in the spring.

Many species of blister beetles produce defensive substance called cantharidin in their body fluids. This is toxic to people, cattle, sheep, goats, dogs, cats, rabbits and rats. Surface exposure to cantharidin can cause skin irritation and blistering. Of far greater concern is internal exposure to cantharidin, particularly by livestock after the consumption of beetle-contaminated hay.

Management:
There are no known economic thresholds for blister beetle management in vegetable crops because the damage rarely causes economic hardships. Often these beetles will swarm to the outer rows of crops, rapidly defoliate plants along the field edges and depart in a few days. If producers are concerned about the potential damage from blister beetles, there may be pesticides registered for use against beetles on the specific crop. Currently, the best source of recommendations for commercial producers is the Pacific Northwest Insect Management Handbook at http://insects.ippc.orst.edu/pnw/insects. Immature blister beetles are considered beneficial as they aggressively seek out and prey on grasshopper eggs. Thus, it may be ill-advised to spray for adult blister beetle populations in fields where the feeding damage is restricted to outside crop rows.

Additional Readings:
Blister Beetles: Coleptera: Meloidae *Epicauta maculata, E. fabricii, E. puncticollis, Lytta nutalli*. Modified from G. Bishop, et al. 1982. Management of Potato Insects in the Western States, Integrated Plant Protection Center of Oregon State University. http://uspest.org/potato/blisterbeetles.pdf

Pacific Northwest Vegetable Extension Group of Washington State University, Oregon State University, and University of Idaho.http://mtvernon.wsu.edu/path_team/vegpath_team.htm

Pacific Northwest Vegetable Extension Group of Washington State University, Oregon State University, and University of Idaho: Photo Gallery of Vegetable Problems http://mtvernon.wsu.edu/path_team/diseasegallery.htm