

Control of Winter Moth Damage in New England Blueberries

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Winter Moth (*Operophtera brumata*): This is a new and important pest of blueberries and other deciduous plants, especially in Southeastern New England. They can severely defoliate bushes. Moths emerge from the soil usually in late November and may be active into January. The male moths are light brown to tan in color and all four wings are fringed with small elongate scales that give the hind margins a hairy or fringed appearance. The female is gray, almost wingless (brachypterous) and, therefore, cannot fly. Females are usually found at the base of trees or scurrying up tree trunks. Winter moth caterpillars are pale green caterpillars with a white longitudinal stripe running down both sides of the body. They are “loopers” or “inchworms” and have just 2 pairs of prolegs. At maturity, the caterpillars will be approximately one inch long, whereupon they drop to the soil for pupation. Pupation occurs from late May into early June. Winter moth caterpillars are often found in association with both the fall and spring cankerworms, which look and have similar feeding patterns to the winter moth caterpillar.

Life Cycle: After mating, the female deposits eggs loosely in bark crevices, under bark scales, under lichen, or elsewhere. The adult moths then die and the eggs over-winter. Eggs are dark-colored at first but turn orange within 3-4 weeks. In March, just prior to hatching, they turn red and eventually a deep, shiny blue just prior to hatching. Eggs hatch when temperatures average around 55°F. It is believed that egg hatch in Massachusetts occurs when 20 Growing Degree Days (base 50) have accumulated, which is historically during the second week in April but earlier if temperatures are atypically warmer, depending. This means that egg hatch occurs just at or right before bud break of most of the host plants. After hatching, the larvae wriggle between bud scales of newly swelling buds of such hosts as: maples, oaks, ash, apples, crabapples, blueberry, cherries, etc. and begin feeding.

Damage: Caterpillars feed within both flower and foliar buds. Once a bud has been devoured from within, the caterpillar will migrate to other buds and repeat the process. Destruction of the flower buds leads to greatly diminished harvest on fruit crops. Older larvae feed in expanding leaf clusters and are capable of defoliating trees and other plants, when abundant.

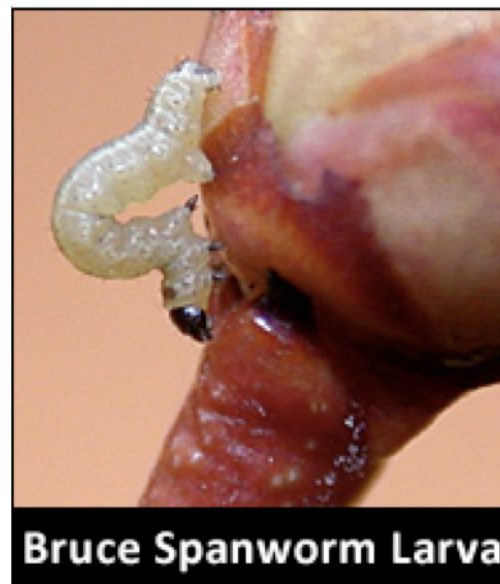

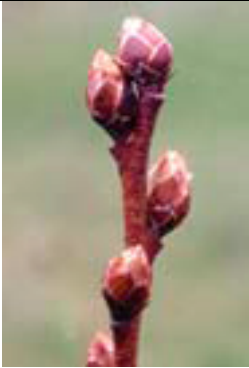



Image Source: [Washington State University: IPM for Blueberries](#)

Management: A dormant oil spray to the trunks and branches of bushes may be helpful to kill the overwintering eggs before they hatch. However, some egg are under bark flaps and loose lichen and may be protected from oil sprays. Caterpillars may also invade host plants by ballooning onto them after treatment has been applied. Several insecticides are labeled for use against either Winter Moth or Spanworm or both and are outlined in the table below.

Image Source: Michigan State University Blueberry Facts website.

Image	Bud Stage	Recommendation for Controlling Winter Moth Damage
 A close-up photograph of a blueberry branch with several small, dark red, pointed buds. The buds are tightly closed and have a slightly glossy appearance.	Dormant	Dormant oil, 2-2.5% plus Esteem 35WP, 5 oz/A or Confirm 2F, 16 oz/A or Asana XL, 4.8-9.6 oz/A
 A close-up photograph of a blueberry branch with several buds that are beginning to swell. The buds are larger and more rounded than in the dormant stage, with a reddish-pink color.	Bud Swell	Dormant oil, 2-2.5% plus Confirm 2F, 16 oz/A or Delegate 3-7 oz/A or Assail 70WP, 1.9-2.3 oz/A or Asana XL, 4.8-9.6 oz/A or Esteem 35WP, 5 oz/A
 A close-up photograph of a blueberry branch with several buds that have broken open. The buds are now white and fluffy, with some green tissue visible at the base.	Bud Break	Confirm 2F, 16 oz or Delegate 3-7 oz/A or Asana XL, 4.8-9.6 oz or Esteem 35WP, 5 oz

Where brand names for chemicals are used, it is for the reader's information. No endorsement is implied, nor is discrimination intended against products with similar ingredients. Please consult pesticide product labels for rates, application instructions and safety precautions. Users of these products assume all associated risks.