

Winter Moth May 2014 UMass Cranberry Station



1st instar winter moth larvae, 1-2 millimeters in size - magnified to see!



Tiny black-headed fireworm



Typical larger black-headed fireworm



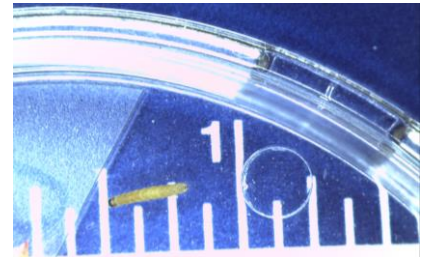
2nd instar winter moth larvae, 3-4 millimeters (or 1/8 inch) in size



Variable sized winter moth larvae on rim of a coffee cup



Several winter moth larvae out of a blueberry bud



2nd instar larva measures about 1/8 of an inch or 3-4 millimeters



Larger winter moth larvae have distinctive white stripes

Winter Moth May 2014 UMass Cranberry Station

Winter moth (*Operophtera brumata*) has long been a pest in Europe and likely made its way into the US via Canada. It has only appeared in southeastern Massachusetts in the last 15 years and on cranberry in the last 10. Unfortunately, the larvae hatch early in the spring and can do much damage before sweeping traditionally begins. There have been reported losses in cranberry from winter moth after the fact and high counts (50-100) of larvae have been found in the spring in sweep sets on cranberry bogs.

Winter moth prefer fruit trees such as apple, crabapple, cherry and blueberry. When given a choice, they will abandon cranberry, but when **not** given a choice, the larvae will eat cranberry. Because the female moths do not fly, if the female develops on cranberry, many eggs will be laid that will emerge in the following year. If you have seen a flight of brown moths over or near your bog in November and December last year, it likely means there was a female there and the eggs are too.

Winter Moth hatch mid-April and feed through May. Winter moth caterpillars feed on both flower and foliar buds. Once a bud has been devoured from within, the caterpillar will migrate to another bud and repeat the process. Destruction of the flower buds leads to greatly diminished harvest on fruit crops such as apple, blueberry and cranberry. The caterpillars finish feeding by the end of May and drop to the ground to pupate! Moths will not fly until October, November, and even December, thus the name "Winter Moth".

When winter moth first hatch they look a lot like tiny Black-headed fireworm. Both can be either yellow or green. Black-headed fireworm are much more active and will wriggle when touched. As soon as Winter moth gets bigger it starts looping and loses its black head. At this point, its color can range from yellow to green to dingy green. Once larger, Winter moth look like our typical green spanworms but tend to be fatter or bulkier than regular green spanworm. In comparison, Black-headed fireworm keeps its diagnostic black head and tend to be yellow. Fireworm will web up in the tips of the new cranberry, and are harder to pick up in sweep nets. Neither caterpillar ever gets bigger than ½ inch and mature larvae are about 1/3 inch (7-9 millimeters) at which point they stop feeding, their body gets shorter and fatter and then pupates.

Winter moth is a species of green spanworm. However, in cranberry, we have our own Green spanworm species as well. Green spanworm (*Itame sulphurea*) larvae usually hatch mid-May and last into June. Green spanworms are green with several white lines along the back and sides and a narrow light yellow stripe along each side. They are more slender and get bigger than Winter moth. They stop feeding when they are about an inch long and pupate in the trash layer around mid-June. Green spanworm moths emerge in July and scatter their eggs among the trash litter under the vines.

In 2014, Winter moth larvae hatched in **blueberry** in the 3rd and 4th week of April and have already been found in cranberry. They are still tiny, between 2 to 6 mm (1/16 - 1/8 of an inch), and are very hard to see. They can feed inside the cranberry or blueberry bud and often do substantial damage without being seen. Winter moth larvae are more likely to be on advanced bogs that are at cabbage head stage or beyond. Scout these areas or sanded areas with tender new growth. It would be wise to be ready to thoroughly sweep your bogs this week. The best control options for spanworms (including Winter moth) are Avaunt (not on flow-through bogs), Delegate, and Intrepid. If you find 10-18 larvae in sweep sets, have a history of bad winter moth, or saw moths flying in November and December near your bog, you should consider a spray to protect your developing buds.

Martha Sylvia, Entomology, UMass Cranberry Station