2010 Cranberry Management Update: Winter Moth Warning

Martha Sylvia
UMass Cranberry Station, martys@umext.umass.edu

Follow this and additional works at: https://scholarworks.umass.edu/cranberry_extension

Part of the Horticulture Commons

Recommended Citation

This Article is brought to you for free and open access by the Cranberry Station Outreach and Public Service Activities at ScholarWorks@UMass Amherst. It has been accepted for inclusion in Cranberry Station Extension meetings by an authorized administrator of ScholarWorks@UMass Amherst. For more information, please contact scholarworks@library.umass.edu.
Winter Moth Warning for Cranberry!

Martha Sylvia
Entomology Lab
Cranberry Station
UMass Amherst

Thanks to
Robert D. Childs and Joe Elkinton
Plant, Soil, and Insect Sciences Dept.
University of Massachusetts, Amherst
Winter Moth:

- Native to Europe, including England
- Has been in Nova Scotia for decades (1949) - in apples and oaks
- British Columbia (Vancouver 1976)
- Only other finds in USA:
  - Washington state and Oregon.
    - in commercial blueberries.
- Now, well-established in eastern MA and RI
Winter Moth: where did it come from?
Life Cycle

Eggs over-winter, larvae hatch early spring

Adults emerge November-January, mate, lay eggs and die

Larvae feed all spring and pupate in late May

Pupae in soil all summer and fall until adult emergence

Slide courtesy of Dr. Joseph Elkinton
Potential Host Plants

Winter Moth
- Oaks
- Maples
- Birches
- Crabapples
- Apple
- Blueberry
- Cranberry…
Winter Moth

They do live on cranberry!
Winter Moth Pheromone Trap Survey and mDNA Analysis 2005/2006

- **Winter Moth mDNA**
- **Bruce spanworm mDNA**

Legend:
- Winter moth mDNA
- Bruce spanworm mDNA
- Winter moth genitalia
- Bruce spanworm genitalia
- Intermediate genitalia
Winter moth is a green spanworm.

Spanworms = Inchworms = GEOMETRIDS = 1000 different species!!

Winter moth is *Operophtera brumata*
Green Spanworm is *Itame Sulphurea*
Bruce Spanworm
Fall Cankerworm
Fall Cankerworm  
*Alsophila pometaria* (Harris)

“1/2” pair of prolegs
WINTER MOTH: ON CRANBERRY?

YES, YES, and YES
• Picked up in cranberry sweeps
  – 40-60 per sweep set
• Completed development on cranberry
• Big fall flight 2009

Multiple reports, Multiple regions
• Carver
• Plympton
• Plymouth
• Sandwich
• Harwich
• Brewster

Flightless female
Winter Moth  *Operophtera brumata*

- Big infestation 2005
- Reduced numbers in 2006
- Flight in 2007 - 2008 was less than previous years (snow?)
- Countless dead and dying trees in southeastern MA
- Heavy flight seen in Fall 2009
- Watch your bog 2010!
Winter Moth

- Sampling is going to be difficult
- Hard to detect when small
- Very similar to black-headed fireworm when tiny!
Winter Moth Life Cycle

- Eggs hatch approximately mid-April
- Larvae weasel into buds and feed
  - Very hard to detect
- Become free-feeders once buds open
- Larvae drop to the soil to pupate late May into early June in MA.
- Adult moths start to appear from Thanksgiving………into January.
WINTER MOTH Management

• Intrepid
• Delegate
• Avaunt

• Flood during flight!
Introducing parasitoid from Europe:
Release of *C. albicans* 2005-2009

2005  200 mated females
2006  200 mated females
2007  1200 at 3 sites
2008  3000 at 3 sites
2009  2040 at 1 site

Biological control!

Slide courtesy of Dr. Joseph Elkinton