

Cranberry Fruitworm in British Columbia 2012-2013

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Acknowledgements: 2012-2013

- Growing Forward, a Federal Provincial Territorial Initiative,
- Cranberry Growers Association, Cranberry grower cooperators, Ocean Spray Cranberries,
- B.C. Ministry of Agriculture, E.S. Cropconsult Ltd.

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Cranberry Fruitworm (*Acrobasis vaccinii*)



- Internal fruit feeding caterpillar, native to North America.
- Infests blueberry and cranberry in eastern North America.
- Moths detected for the first time in pheromone traps in a few BC cranberry fields in 2011.
- **Major Hosts: cranberry, blueberry.**
- Wild and minor crop hosts recorded:
 - Wild vaccinium
 - One generation per year.

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Life cycle:

- Moth emerges in summer (June-July) and lays eggs on green fruit (July).
- Larvae hatch and burrow into developing fruit (July-Aug).
- Larvae will infest 3-6 fruit before exiting and searching for an overwintering site (August).
- Over-winters as larvae/pre-pupae in a silken structure in soil.
- Pupates in spring/early summer.

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Cranberry Fruitworm Moth

Grey-brown moth with white triangles on wings; hind triangles with two dots each. Medium size moths, 15 mm wingspan.



Note: there are moths that look similar; these tend to occur later, i.e. in August. Sometimes girdler moths will get into fruitworm traps.

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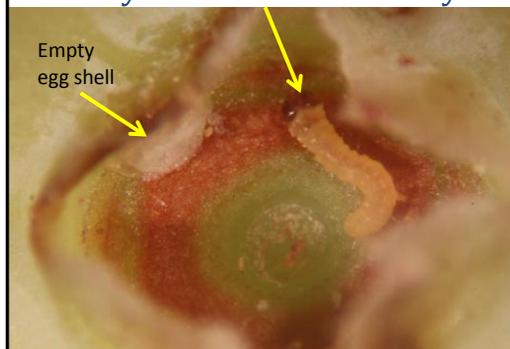
Cranberry Fruitworm Eggs

- Very small (1mm). Cannot identify without a lens.
- Laid singly or a few overlapping on the fruit calyx of green fruit.



Newly hatched larvae in calyx

Empty egg shell



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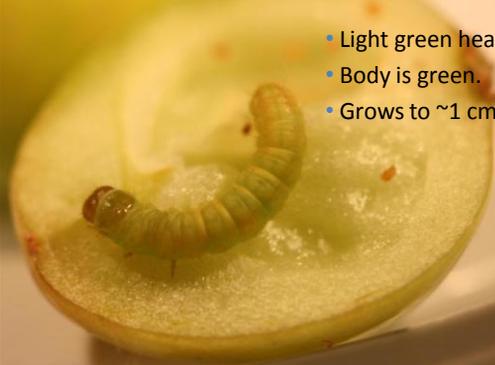
Bore hole in stem end (mostly) from tiny new larvae entering fruit. Unique to this pest.



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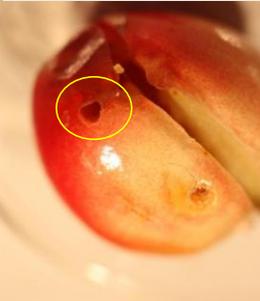
Cranberry fruitworm larvae

- Light green head
- Body is green.
- Grows to ~1 cm



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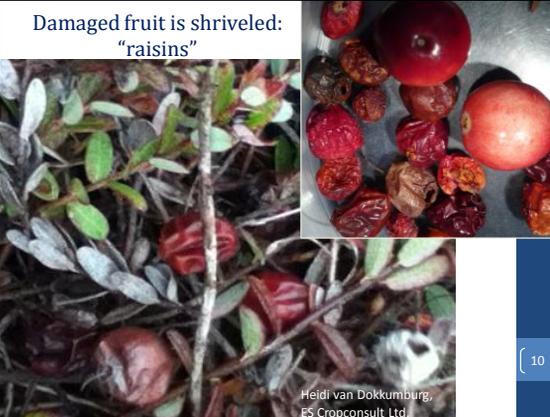
Larvae exit holes and frass in cranberry fruit




Looks very different from Fireworm, which mostly feeds on foliage, and sometimes makes large irregular holes in fruits.

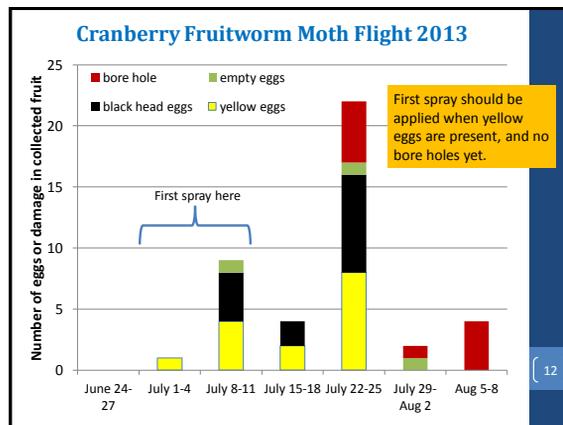
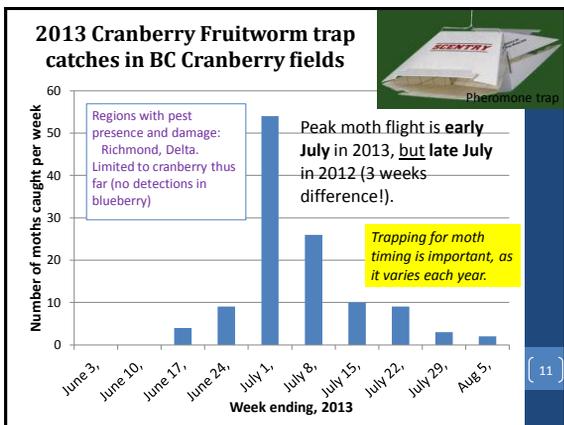
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Damaged fruit is shriveled: "raisins"



Heidi van Dökkumburg, ES Cropconsult Ltd.

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Insecticide management

- Target is the egg and young larvae **before** they bore into the fruit.
- Goal is <3% fruit damaged at harvest.
- Apply during egg laying, when 1 egg is found in 100 berries checked (per 2 acres);
 - Egg laying begins just after moth catches begin (in 2012, was early July onwards).
- Second application 7-10 days after the first.
- Products are available for use in BC. Check with your packer to confirm:
 - Intrepid, Altachor,
 - Suppression ONLY: Success, Entrust (organic)

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Other management tools

- **Biological control:** some native parasitoids in eastern North America, but not enough to keep below damage thresholds. Not sure of levels in BC or western regions.
- **Cultural:** 30 day re-flood before end of dormancy; not practiced in all regions.

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More information: Cranberry Fruitworm in cranberries:

University of Maine

- <http://umaine.edu/cranberries/grower-services/insects/cranberry-fruitworm/>

Long Beach, Washington State University

- <http://longbeach.wsu.edu/cranberries/documents/cranberryfruitwormwisconsin.pdf>

Timing for pest life stages will be a bit later in BC than in other cranberry growing regions.

Crop development in relation to pest development will also be slightly different.

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