

The Blueberry Leaf-tier

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Introduction

The blueberry leaf-tier, *Croesia curvalana* (Kearfott), found in low numbers throughout the blueberry growing area of Nova Scotia, can be a serious problem in commercial fields. In the past, damage has been restricted to certain areas of Cumberland County. This fact sheet outlines the description and biology of the various stages of the blueberry leaf-tier. Ways to monitor and control this insect are

Blueberry Leaf-tier adult



Click picture to enlarge

Description

The adult is a small moth, about 6 mm long, with a wingspan 1.4 to 1.6 cm. The thorax and margins of the wings are yellow; the central portion of the front wing is reddish brown, with a small kidney-shaped yellow spot on each forewing. The hind wings are gray with a fringe of white.

The eggs are small, approximately 0.3 mm in diameter, and oval. The eggs are white in colour when they are first laid, but turn brown after three days. The first to third instar larvae are cream coloured with a dark thorax and black head. The fourth instar larvae are yellowish with a cinnamon brown head and thorax. The pupae are dark brown and about 5 to 7 mm in length.

Leaf-tier larva



Click picture to enlarge

Biology

The eggs, the overwintering stage of the blueberry leaftier, are laid singly on leaf litter around the base of blueberry plants in late July and early August. The eggs hatch over a three week period beginning in late April and early May.

Newly hatched larvae climb up blueberry stems and burrow into flower buds where they begin to feed.

Flower bud showing larval activity



Click picture to enlarge

Second and third instar larvae feed on expanding leaf buds and young leaves. Leaves are fastened together with silk to form a protective shelter around the larvae. Older third instar larvae and fourth instar larvae often move about and feed on the flowers as well as leaves.

Pupation takes place during the first three weeks of June, usually within the shelters.

Leaftier leaf shelters



Click picture to enlarge

Damage

This insect causes damage solely in its the larval stage. [First instar larvae](#) feed on developing flower buds. This is the most serious damage caused by leaftier and can affect up to 20 percent of buds.

Older larvae feed on leaves and also flowers. In severe outbreaks defoliation can be close to 100%.

Monitoring Technique

To determine if a field will need a spray to control larvae the following spring, adult moths can be monitored using pheromone traps. Green Unitraps® baited with blueberry leaftier pheromone are recommended. The traps are available from Phero Tech Inc., 7572 Progress Way, Delta, B.C. V4G 1E9.

Traps to monitor adult emergence should be placed in the field by the third week of June. Traps should be set at least 40 m apart and at least 25 m from the edge of the field.

Number of Monitoring Traps Required per Field	
Field Size	Traps Required
Less than 10 acres	3
11 - 50 acres	6
51 - 100 acres	9-10
101-200 acres	12-15

Traps should be checked every two to three weeks from mid-June until mid-August. The number of leaftier moths in each trap should be recorded each time the trap is checked. The average number of moths caught per trap is determined at the end of the season. This number will be used to determine if it will be necessary to control the larvae in the following year.

Action Threshold

The action threshold for applying a spray to control larvae the following spring is an average of 750 moths per trap for the trapping season.

Control

Control of the larval stage can be obtained by applying Deltamethrin (Decis) when the flower buds have begun to swell and there is some green colour showing. This corresponds to a 10% egg hatch and the F1 stage of flower bud development. Application rates can be found in the Lowbush Blueberry Protection Guide, ACC No.1011.

Flower bud, F1 stage



Click picture to enlarge

References:

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Acknowledgements

I would like to acknowledge Agriculture and Agri-Food Canada Research Centre, Kentville, Nova Scotia for the second, third and fourth slides, and R. Delbridge for the fifth slide. I would also like to thank Dr. Kenna Mackenzie for reviewing this fact sheet.

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January 1996



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