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# Lowbush Blueberry Fact Sheet

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## The Blueberry Leaftier

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### Introduction

The blueberry leaftier, *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 leaftier. Ways to monitor and control this insect are suggested.

### Description

The adult is a small moth,(Fig.1) about 6 mm long with a wingspan 1.4 - 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,(0.3mm in diameter) and oval. Eggs, white when first laid, turn brown in colour after three days. The first to third instar larvae are cream coloured with a dark thorax and black head (Fig.3). The fourth instar larvae are yellowish with a cinnamon brown head and thorax. The pupae are dark brown and about 5 - 7 mm in length.



Fig. 1 - Blueberry leaftier adult.



Fig. 2 - Flower bud showing leaftier larval activity.





## Biology

The eggs, the overwintering stage of the blueberry leaf-tier, 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 (Fig 2). 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 (Fig.4). 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.

The adults begin to emerge during the first week of July reaching peak numbers in late July. Males begin to emerge first a few days before females emerge

## Damage

Damage is caused solely by the larval stage. First instar larvae feed on developing flower buds. This is the most serious damage caused by leaf-tier 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 in the following spring, adult moths can be monitored using pheromone traps. Green Unitraps<sup>R</sup> baited with blueberry leaf-tier pheromone are recommended. The traps are available from Phero Tech Inc., 7572 Progress Way, Delta, B.C. V4G 1E9.

Traps should be placed in the field by the third week of June to monitor adult emergence. The suggested number of traps per field is 3 for fields less than 10 acres in size, 6 for fields 11 - 50 acres, 9-10 for fields 51 - 100 acres, 12-15 for fields 101-200 acres. Traps should be set at least 40m apart and at least 25 m from the edge of the field.

Traps should be checked every two - three weeks from mid June until mid August. The number of leaf-tier 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.







Fig. 3 - Leaf-tier larva



Fig. 4- Blueberry leaf-tier leaf shelters







# 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 (Fig.5). This corresponds to the F1 stage of flower bud development as described in the fact sheet "Control of Monolinia Blight of Lowbush Blueberries, and 10% egg hatch.

Application rates can be found in the Lowbush Blueberry Protection Guide, ACC No.1011.



Fig. 5 - Flower bud at F1 stage of development

# References

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