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# Lowbush Blueberry Fact Sheet

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## The Blueberry Flea Beetle

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### Introduction

The Blueberry Flea Beetle, *Altica sylvia* Malloch can cause severe defoliation in lowbush blueberry fields. Both the adult and larval stages feed on the blueberry plant. The following information should help the grower to recognize the various stages of this insect, and to be able to control infestations.

### Description

Adult blueberry beetles are small, oblong shaped beetles, 5-6 mm in length (Fig.1). They are shiny, coppery bronze in colour. The name 'flea beetle' comes from the fact that the hind legs are enlarged, and developed for jumping.

The eggs are very small, orange-yellow in colour and are laid singly near the base of the blueberry plant, or in the leaf litter.

The larvae, (Fig.2), are dark brown, almost black in appearance. They resemble small caterpillars, but have only three pairs of legs. They vary in size from 3-10 mm. They are very similar in appearance to the larvae of the blueberry leaf beetle, which tend to be lighter brown in colour. Flea beetle larvae can be distinguished from blueberry leaf beetle larvae by the lack of simple eyes (stemmata). This characteristic can only be seen under high magnification.

The pupae are yellow-orange in colour, and are found about 12mm deep in the soil.



**Fig. 1 - Blueberry Flea Beetle adult.**





## Biology

The winter is passed in the egg stage in the litter layer of the blueberry field or at the base of blueberry plants. The eggs hatch in May when the leaves of the plant begin to unfold. The larvae begin to feed on the leaf buds and newly expanded leaves. They go through three instars before burrowing into the soil to pupate. The larval stage takes from 9-20 days to complete. The eggs hatch over a considerable period so that larvae may be found from mid May to mid June. When fully grown the larvae pupate in the soil, just below the surface. The pupae require 15-28 days (average 18 days) to emerge as adults. The adults feed on the foliage and if abundant, may do considerable damage. Adults begin to appear in late June and are present until late August. Mating takes place about two weeks after the adults emerge. Eggs are laid in late July and August.

## Damage

Both the larvae and adults feed on the foliage of blueberry. If present in large numbers they can cause defoliation of the plants. The larvae feed mainly along the margin of the leaves giving it a distinctive notched appearance (Fig. 3). The adults chew small holes in the leaves. Severe infestations may completely defoliate the plant. Most outbreaks occur in the crop year, during the bloom period. If uncontrolled this can result in crop loss.

## Monitoring Technique

Blueberry flea beetles can be monitored by sweeping the foliage with a 30 cm diameter insect sweep net. Crop fields should be sampled weekly during May to mid July. Sprout fields should be sampled weekly throughout June. This insect is most likely to be a problem in the crop year.

It is suggested at least three samples per field in fields of 5 hectares or less be taken. Each sample should consist of 25 sweeps. For larger fields an additional sample should be taken per 5 hectares.

Sampling should be done on warm sunny days. Care should be taken to walk toward the sun while sweeping, so your shadow does not fall across the plants that you are sweeping.

## Action Threshold

An action threshold has not been established for either the adults or larval stage of this insect. Based on research done at the University of Maine, it may range from 3-5 larvae per sweep. This would equal 75-125 per sample. If sample numbers are found in this range, the field should be checked for signs of defoliation and control measures taken if necessary.







Fig. 2 - Blueberry Flea Beetle larva.



Fig. 3 - Typical feeding damage caused by Blueberry Flea Beetle larvae.







# Control

Very little information is available about the natural control agents for the blueberry flea beetle. The type of pruning used does have an effect on flea beetle populations. Since the eggs are laid in the leaf litter, and are the overwintering stage, either a fall or spring burn will reduce the flea beetle population. Most outbreaks of flea beetle occur in mechanically pruned fields.

If populations reach the levels discussed under "Thresholds", an insecticide should be applied. Consideration should be made for the safety of pollinating insects when deciding to control this insect, as most outbreaks occur during the bloom period. Control products and rates of application are listed in the Lowbush Blueberry Protection Guide - ACC 1011.

## Note

Nova Scotia growers can purchase sweep nets through the Blueberry Producers Association of Nova Scotia. They may also participate in the annual blueberry insect survey. For details about this program contact: Lorne Crozier, Entomologist, Plant Industry Branch, N.S.D.A.M., P.O. Box 550, Truro, N.S. B2N 5E3 PHONE 893-6548

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