



Blueberry flea beetle: *Altica sylvia* Malloch

Economic importance and damage

Regarding Canada, the [blueberry flea beetle](#) has been reported from the following provinces: Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Ontario. Regarding New Brunswick, the blueberry flea beetle commonly occurs in lowbush blueberry fields. It has also been reported on highbush blueberry. In New Brunswick, larval populations occasionally reach high enough levels to cause [severe damage](#) to foliage resulting in crop loss. Larval infestations are now as common in sprout and crop fields due to most fields now being pruned by mowing. Blueberry flea beetle infestations used to be more common in crop fields, compared to sprout ones when fields had been pruned by burning. The blueberry flea beetle is seldom a problem in fields that are pruned by burning every two years as the eggs are destroyed with a deep enough burn.

Most of the damage is caused by the larval (grub) stage. Larvae feed mainly on the expanding foliage but also feed on the developing buds causing some crop loss. Typical feeding damage appears as chewed out leaf margins. The adults also feed on leaves and can do considerable damage if populations are large enough.

Life cycle and description

The blueberry flea beetle has four life stages: egg, [grub \(larva\)](#), pupa, [adult](#). The blueberry flea beetle spends the winter in the egg stage in litter. The eggs are orange-yellow in colour, about 1 mm long and are oval in shape. Most eggs hatch over a 2 to 3 week period in the spring.

In New Brunswick, larvae (the grub stage) begin feeding on the leaves and buds before they are fully expanded. In southern NB, larval populations have been collected starting from mid-May. Peak populations occur from late May until mid to late-June, then gradually decline. In northern NB, peak larval populations occur from late May to late June, then gradually decline. The larva goes through three instars (stages), with the largest instar being approximately 6 mm long. The larval stage lasts from 10 to 19 days, depending upon the temperature. The larva is dark brown to almost black in colour (Figure 1). It is similar in appearance to that of the blueberry leaf beetle larva which is lighter brown (and much less common). Six legs can be seen under the body behind the head. The full-grown larva crawls into the leaf litter to transform into a pupa to become an adult. The development period for a mature larva to become an adult is 15 to 28 days (average 17 days).



Fig.1. Grub (larval) stage of the blueberry flea beetle

Wild Blueberry Fact Sheet C2.1.0

The pupa can occur 12 mm into the soil. It is oval in shape, 4 to 5 mm long and is initially orange in colour.

The adult is 5 mm long, oval in shape, shiny, and coppery bronze in colour (Figure 2). The adult is called a flea beetle as it has an enlarged area on the hind leg and jumps when disturbed. In southern NB, adult populations have been collected from early July until autumn, with peak populations occurring from early July to mid-August. In northern NB, adults have been collected from just before mid-July until autumn, with peak populations occurring from mid-July until early September. Newly emerged adults mate after approximately 10 to 14 days. Eggs are laid a few days later. This would indicate that the majority of eggs are laid from mid-July to late August in southern NB and from late-July to late-August in northern NB. Eggs are laid singly, near the base of the plant or in leaf litter. The adults do not survive the winter.



Fig. 2. Adult blueberry flea beetle

Pest management

Blueberry flea beetle populations can be monitored by sweeping foliage in sprout and crop field sections with a sweep net. Larvae are monitored by making 25 sweeps of the net. At least three samples of 25 sweeps should be taken for each five hectares of the field. In field areas where a problem is suspected, or where a recent infestation has occurred, sampling should be increased to at least 25 sweeps per 1,000 metres. Fields should be monitored two times a week starting from mid to late May, depending upon the region, starting when larvae are small and continuing for 3 to 4 weeks. Monitoring should be done on warm, sunny days when the foliage is dry. Fewer larvae are collected when the foliage is wet.

It has not yet been determined what population levels require a control. Based upon research done at the University of Maine, it may range from 75 to 125 larvae per 25 sweeps of the net. If populations reach this level, the area should be inspected for signs of damage since control measures may be required. Larval feeding damage appears as notches chewed out of leaf margins (Figure 3).

Sampling in sprout fields is more difficult since the stems are short. An alternative method, to overcome this drawback, is to leave an unpruned strip in problem field areas for monitoring purposes.

It is sometimes necessary to monitor for blueberry flea beetle adults when larvae have not been adequately controlled. The threshold used for adults is the same as that used for larvae, as are the rest of the monitoring techniques. Fewer adults are collected when the foliage is wet. Fields should be monitored two times a week starting late-June to early July, depending upon the region, and continuing until the pre-harvest interval. Collection samples may be placed into a clear plastic bag to facilitate counting. The sample may also be frozen.

Outbreaks of blueberry flea beetle populations are more common in fields that have not been routinely pruned by burning. Pruning by burning may be done in the autumn or spring to destroy eggs. The burn has to be deep enough to reach the eggs at the base of the leaf litter.

Very little information is known regarding natural control agents for the blueberry flea beetle.

Insecticide recommendations and rates are listed in the Wild Blueberry Insect Control Selection Guide ([fact sheet C1.6.0](#)) which is updated annually. Further information can be obtained from the NB Department of Agriculture, Aquaculture and Fisheries.



Fig. 3. Larval feeding damage

References:

- Maine Agric. Exp. Stn. Bull. 273: 149-204, 1918;
- Agric. Can. Publ. 754: 26-30, 1961;
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- Description du cycle biologique et dynamique des populations de l'altise de l'airelle au Nouveau-Brunswick, Université de Moncton Rapport d'étape, 1994;
- NS Dept. Agr. & Marketing, The Blueberry Flea Beetle, factsheet, 1995;
- PMAO, The Management of Blueberry Insect Pest Workshop Report, 1995.