



Blueberry sawflies: *Neopareophora litura* (Klug) and *Pristiphora cincta* Newman

Economic importance and damage

Two species of sawflies, possibly three, are known to feed on wild blueberry plants. Blueberry sawflies are common but are generally not found at population levels to cause serious injury in New Brunswick. Infrequent infestations have been reported from Maine and Nova Scotia when populations reached high levels. In eastern Canada, the combined distributions of the two species include: Newfoundland, Nova Scotia, Prince Edward Island, New Brunswick, Quebec. The first species listed is the more common one.

A newly hatched larva of the more common species feeds within the leaf bud for a few days. It moults and then feeds on leaf edges. The larva feeds during the day and night. Infestations are usually in isolated field patches and tend to occur in crop fields. In Maine and Nova Scotia, where infestations have occurred, the larva has also been known to feed on blossoms.

Life cycle and description

Sawflies have four life stages: egg, larva, pupa, adult sawfly. The larva (immature stage) overwinters in a cocoon 5 to 8 cm deep in the soil. The larva changes into a pupa, inside the cocoon, within one to two weeks before the adult emerges. Adult emergence varies from year to year.

In New Brunswick, adults of the more common species emerge from early to late May. Eggs are usually laid singly in the leaf bud. Approximately 30 eggs are laid. They hatch in 5 to 11 days. Larvae feed within the bud, then moult and feed on leaves. Larvae feed from mid-May to mid-June then drop to the ground from early June to late June to spin cocoons in leaf litter. They overwinter for approximately ten months. Young larvae, which are rarely seen, are whitish in colour with black legs and a black head. Older larvae (Figure 1) are grass-green in colour, usually the colour of blueberry leaves. There is a continuous dark-green line, when seen from above. A few larvae are pink. They grow to a length of 9 to 11 mm.

In New Brunswick, adults of the less common species emerge from early August to early September. Eggs are also found at this time. Approximately 40 eggs are laid. They are laid on the leaf edge. Larvae feed from late August to mid-September and spin cocoons from mid-September to mid-October. Older larvae are red. There is also a continuous dark green line, when seen from above, and a white stripe along each side of this line. Larvae grow to a length of 13 to 15 mm.

Blueberry sawfly larvae resemble caterpillars. They both have three pairs of true legs behind the head. However, unlike caterpillars, the sawfly larvae have seven pairs of fleshy leg-like structures on the remainder of the body while caterpillars have, at most, five pairs. The head is generally more distinct than that of most caterpillars. The pupa is enclosed in a spun-up cocoon which is light to dark brown in colour. The cocoon is approximately 6 mm long and is usually covered with parts of dead leaves. The adult (Figure 2) is 4.5 to 5 mm long and has four membranous wings. The body colour varies from yellowish brown with black markings to entirely black. Adults are not usually seen. Sawflies are closely related to wasps and bees but do not have a constricted area in front of the abdomen.

Pest management

Larval populations can be monitored by sweeping the foliage with a sweep net. Larvae are monitored by making 25 sweeps of the net during the day. At least three samples of 25 sweeps should be taken for each five hectare block. Monitoring should be done once a week starting from early May, when the larvae are small, and continuing until early June.

It has not yet been determined what population levels require a chemical treatment. However, based upon research done at the University of Maine, it may range from 75 to 125 larvae per 25 sweeps of the net in crop fields. If numbers of larvae reach this level, the area should be inspected for signs of damage since control measures may be required. Evidence of sawfly larvae feeding on blueberry leaves should be verified as other species of sawflies feed only on weeds. Most of these other species are generally scarce. Nineteen species of sawflies have been collected from wild blueberry fields in New Brunswick. However, only two or three species feed on wild blueberry plants.



Fig. 1. Sawfly larva (green colour lost due to preservation)



Fig. 2. Sawfly adult

Sampling in pruned fields is more difficult since the stems are short. There is currently no estimate for damaging levels of sawfly larvae in pruned fields. To overcome this drawback, leave an unpruned strip for monitoring purposes.

Most infestations occur in the bloom period, therefore, considerations should be made regarding the safety of pollinating insects when deciding upon control measures. Small infestations may be controlled with a localized treatment.

Sawfly larvae are attacked by several species of parasitic wasps. They help keep population levels low. A naturally occurring fungus, *Paecilomyces farinosus*, has been shown to kill pupae of *Neopareophora litura*, the more common species of sawfly, in wild blueberry fields.

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.

References:

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