

## **Spiral Spruce Cone Borer, *Strobilomyia neanthracina* Michelsen**

Diptera: Anthomyiidae

## **Spruce Seed Moth, *Cydia strobilella* (L.)**

Lepidoptera: Tortricidae

Ruth, D. S.; Miller, G. E.; Sutherland, J. R. 1982. A guide to common insect pests & diseases in spruce seed orchards in British Columbia. Inf. Rep. BC-X-231. Environment Canada, Canadian Forestry Service, Pacific Forest Research Centre; 28 p.

**Objective:** To provide a rough treatment threshold for spruce conelets, *Picea* spp., infested by *C. strobilella* and *S. neanthracina*.

**Abstract:** Spruce seedmoth, *Cydia strobilella* (L.), is an important pest of spruce (*Picea* spp.) seeds. Larvae feed inside seeds where the damage is cryptic. Spruce cone maggot, *Strobilomyia neanthracina* Michelsen, is a major pest of spruce cones and seeds. Larvae tunnel within cones in a characteristic spiral manner, consuming seeds developing at the base of scales. Primary hosts of both pest species include white spruce, *Picea glauca* (Moench) Voss, Engelmann spruce, *Picea engelmannii* Parry, and other *Picea* spp. Both pest species can cause substantial seed loss in seed orchards in Canada and USA.

Random sampling of 5-10% of the cone-bearing spruces in an orchard can provide a rough estimate of seed loss by *C. strobilella* and *S. neanthracina*. Ten conelets should be taken from each sampled tree and examined visually for eggs. A seed loss of 10-20% can be expected at harvest if eggs of either species are found on two conelets from each tree, thus control measures are warranted if more than one cone per tree is infested.

**Sampling Procedure:** Immediately after pollination in the spring, randomly select 5-10% of the cone-bearing spruces in an orchard. Collect 10 conelets throughout the canopy of each selected tree. Using a hand lens, examine each conelet for the presence of *C. strobilella* and *S. neanthracina* eggs. If two conelets from each tree are found to have eggs of either pest species on them, a seed loss of 10-20% can be expected at harvest. Managers should consider control measures if more than 1 conelet per tree is infested and the majority of conelets in the orchard are closed and are turning downwards. Seed loss may have already occurred by the time conelets are pendant.