

# Forest Pest Fact Sheet

July 2016



## **YELLOW HEADED SPRUCE SAWFLY, (*Pikonema alaskensis*)**

### **BACKGROUND**

The yellowheaded spruce sawfly, *Pikonema alaskensis*, is a common defoliator of young open growing spruce trees predominantly in forest plantations, shelterbelts and ornamental plantings. This insect can have an economic impact on forestry, the nursery industry and farm shelterbelts, as well as an aesthetic impact on ornamental trees..

### **DISTRIBUTION**

This insect pest is native to North America. It ranges from coast to coast in Canada and into the Northwest Territories. Its hosts include all native and exotic species of spruce.

### **DESCRIPTION OF LIFE STAGES**

Adults are reddish brown wasps that are approximately 8-10 mm in length. The pearly-white ovate eggs are 1.3 mm long and .7 mm wide. The caterpillar-like larvae, when mature larvae are 16-20 mm long and are a dark glossy green with lighter stripes down the sides. Their heads are reddish brown in colour. Pupae are formed in thin, dark brown, fibrous cocoons in the duff layer of the soil. Cocoons are approximately 10 mm in length.

*Yellowheaded spruce sawfly Adult*



*Image: Thérèse Arcand, Natural Resources Canada,  
Canadian Forest Service*

*Yellowheaded spruce sawfly Larvae*



*Image: Saskatchewan Ministry of Environment*

*Yellowheaded spruce sawfly cocoon*



*Image: Saskatchewan Ministry of Environment*

*Yellowheaded spruce sawfly damage*



*Image: Saskatchewan Ministry of Environment*

## HOST SPECIES

All native North American spruce species are hosts. In Saskatchewan it attacks native white and black spruce, plus introduced Colorado spruce.

## LIFE CYCLE

This insect has only one generation per year. Adults emerge from cocoons in the duff layer of the soil in May and June. Females cut a slit in the bark at the base of a needle and lay a single egg in the slit. Larvae hatch in five to ten days and begin feeding on new foliage. Once new needles have been consumed, larvae migrate to old foliage and resume feeding. The larvae are gregarious, feeding in groups. Larvae feed till the end of July and then drop to the ground. They burrow in the duff and spin a leathery silken cocoon to spend the winter. In spring pupation occurs and adults emerge once the pupal stage is complete.

## SIGNS, SYMPTOMS AND DAMAGE

Yellowheaded spruce sawfly larvae do not produce webbing like budworms. Often only the top half of needle consumed. Feeding occurs on both new and older foliage. Severe feeding leaves trees with a ragged appearance. Young open grown spruce trees are most susceptible. Severely attacked trees are often under 25 years and less than 4 metres in height. Repeated defoliation over a number of years will cause branch mortality, top-kill and whole tree mortality. When larval populations are high trees can be killed in as little as two years because larvae feed on both new and older foliage. Outbreaks can last up to six to seven years.

## MANAGEMENT PRESCRIPTIONS

When severe infestations persist control is necessary to protect high value open growing plantations, shelterbelts and ornamental trees. On individual ornamental trees, larvae can be removed by hand if they are not too numerous and can be reached. Alternatively, a detergent or insecticidal soap solution applied under high pressure can be an effective means of control without affecting non-target beneficial insects. In larger scale plantations and shelterbelts larvae can be readily controlled by ground application of registered insecticides, usually in mid to late June.

## REFERENCES FOR ADDITIONAL INFORMATION

Government of Alberta, Agriculture and Rural Development

Yellowheaded spruce sawfly

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/prm3005](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/prm3005)

Yellowheaded Spruce Sawfly - Its Ecology and Management

United States Department of Agriculture Forest Service, North Central Forest

Experiment Station - General Technical Report NC-179

<http://www.na.fs.fed.us/Spfo/pubs/gtr/sprucesawfly/biology.htm>

Yellowheaded Spruce Sawfly -US forest Service, Alaska Region

[http://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fsbdev2\\_037814.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev2_037814.pdf)

Agriculture and Agri-Food Canada

Agroforestry, diseases and Pests

<http://www.agr.gc.ca/eng/science-and-innovation/agricultural-practices/agroforestry/diseases-and-pests/yellow-headed-spruce-sawfly/?id=1200353199211>