

NEWS COLUMN

July 21, 2020

Eastern Spruce Budworm Population

It has been identified that this year is high in the generational population of spruce budworm. Many people in the area have seen an emergence of spruce budworm among their tree population. The eastern spruce budworm is a native forest insect in Minnesota that is responsible for the defoliation and killing of extensive acreages of balsam fir and spruce trees. Budworm outbreaks have been known to occur cyclically every 25-40 years. Fortunately, with effective forest management spruce budworm can be prevented.



The spruce budworm's life cycle starts with moths laying up to 10 egg masses on spruce fir needles in July. The larvae hatch from the eggs and after overwintering, young larvae emerge before balsam fir budbreak in the spring. Budworm larvae feed on new foliage growth through May and June then pupate and emerge as moths by mid-July.



Budworm feeding damage is most notable on outer branch shorts in the upper crowns of spruce and fir trees. Partially eaten needles are webbed onto the branch tips and turn a reddish-brown color. The long-term damage of budworm defoliation can result in top kill in 2 to 3 years for balsam fir or 3 to 5 years in white spruce. Additional years of feeding could result in tree mortality.

If trees are showing signs of spruce budworm damage, there are a few measures

that can be taken. Commercial thinning strategies can be used to promote healthy trees that can be less susceptible to damage from spruce budworms. Yard trees can be sprayed to protect foliage and kill spruce budworm. However, it is important to note that the pesticides must be applied in early June prior to budworm needle feeding. These applications must occur yearly and should be applied topically. During application, be aware of bees and pollinator gardens nearby for drift of pesticides.

One organic pesticide option to treat spruce budworm is *Bacillus thuringiensis* (Bt). Other pesticides that include acephate, bifenthrin, carbaryl, chlorpyrifos, cyfluthrin, flubendiamide, methoxyfenozide, spinosad, or tebufenozide as their main ingredient can be used for treating spruce budworm. Mention of pesticide or use of a pesticide label is for educational purposes only. Always follow the pesticide label directions attached to the pesticide container you are using.

You can find additional resources at: <https://extension.umn.edu/forest-pests-and-diseases/eastern-spruce-budworm>

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