



A- https://www.flickr.com/photos/sanmartin/31434461584 B & C - https://fieldguide.mt.gov/speciesDetail.aspx?elcode=IIHOM21020

WARMING TEMPERATURES INFLUENCING BALSAM WOOLLY ADELGID

As summer temperatures have increased and winters have become evidently milder than they used to be, the industry has been experiencing more pest and disease activity as a result of climatic changes. One pest that has been reported in the province is Balsam Woolly Adelgid (BWA). This insect is a tiny, invasive, sap-sucking organism that attacks Balsam and other True Fir trees. When infested, the pests cause deformities, and in the worst case it will cause mortality of the tree.

LIFECYCLE

This adelgid has four main stages throughout its life cycle, Egg, crawler, nymph and the adult stage. The crawler stage of this pest is the only stage in which the adelgid is able to move from tree to tree spreading throughout plantations. In some cases it can also be spread by wildlife and can most commonly spread airborn by wind. In all other lifecycle stages this pest stays feeding on the same tree for the remainder of the cycle. BWA reproduce parthenogenically, meaning offspring can be produced without being fertilised by males. An adult female is able to reproduce up to 200 eggs, taking about a month to then develop into the crawler stage. Although sounding intimidating this reproduction method is beneficial to growers, it lessens the opportunity for the insect to grow a pesticide resistance. This adelgid over winters as an immature nymph, developing into a mature nymph between March to April. The window from April through to October the adelgid is in the crawler stage, the rest of the year BWA typically wouldn't infest healthy trees as they are dormant. As we experience warming temperatures, the active crawler stages lengthen, and the dormant season shortens, resulting in more than their typical 2-3 generations annually.


https://tidcf.nrcan.gc.ca/en/insects/factsheet/5314


https://www.fs.usda.gov/internet/FSE_DOCUMENTS/fsbdev2_043667.pdf

DETECTION & DAMAGE


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https://tidcf.nrcan.gc.ca/en/insects/factsheet/5314

As Christmas Tree producers, growing True Fir, this pest can cause significant damage throughout lots when not managed correctly. The lack of diversity within tree lots makes these areas a very susceptible home for this invasive pest. As a producer of trees, management and scouting lots for any disease, pests or damage is a vital part of the job. Detecting this unobtrusive insect can be difficult due to their small size. BWA when present will often appear as a white, woolly-like mass, approximately 1 mm on the bark of the tree, most noticeable on branch stems, and at first glance has a similar appearance to snow in the foliage of trees.

MANAGEMENT

Growers who experience an outbreak of BWA on their plantation should proceed with the following steps:
1. Identify trees which have been infested with BWA, (see Detection & Damage section of this article).
2. Cull trees which have been infested. This cull must be done during winter months while the BWA is dormant in order to reduce the spread.
3. Culled trees should be burnt and if a burn is not possible the culled trees should be wrapped in plastic to prevent further spread of the BWA.
4. Contact Nova Scotia Christmas Tree Council by phone or email and report the infestation.

If an infestation is severe there is an option for a chemical pesticide. This product being Atlus Insecticide (Product number: 33176). This pesticide is registered within Canada and is approved for use on Christmas trees. It is applied via foliar application and is effective against both the adelgid and aphid stages of the BWA. As per the application instructions on the Atlus Insecticide (Product number: 33176) label, Apply at a rate of 1000mL/ha and a spray volume of 1000 – 1200 L/ha. Begin application when crawlers are present at bud break. Uniform coverage of the crop is required for optimum control. Spray crop until wet but not dripping. Implement a buffer zone of 5 m when working near waterways. It may be necessary to repeat applications, but do not exceed the maximum amount of 2000 mL of product per hectare annually. Minimum treatment interval is 7 days, and the restricted entry interval (REI) is 12 hours after application. When using any pesticide products, ensure to follow label instructions with regard to application rates and product safety.

RESOURCES

https://ctcns.com/wp-content/uploads/2024/06/BWA-All.pdf, https://novascotia.ca/natr/forestprotection/foresthealth/sheets/bwa.asp, https://content.ces.ncsu.edu/balsam-woolly-adelgid, https://tidcf.nrcan.gc.ca/en/insects/factsheet/5314

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