BRITISH COLUMBIA | Ministry of Agriculture

Pest Alert

January 2012

Swede Midge

Swede Midge *Contarinia nasturii* (Diptera: Cecidomyiidae) is a serious cole crop pest, particularly for broccoli and Brussels sprouts and will also infest Brassicae weeds and canola.

Adult Swede Midge. Photo credit: Rebecca Hallett, School of Environmental Sciences, University of Guelph

Swede midge is native to Europe, and was first identified in North America in Ontario in 2000. It is currently established in major cole crop growing areas of eastern USA, Quebec, Ontario, and in canola growing regions of Saskatchewan and Manitoba

Prevention is critical to keep British Columbia free from Swede midge. Once Swede midge is established it cannot be eradicated from an area.

The B.C. Ministry of Agriculture and the B.C. cole crop industry cooperated in 2009-2011 to survey cole crop fields for Swede midge in the Fraser Valley using sex pheromone baited traps to catch males and visual assessments of plants. Swede midge was not detected and there were no suspicious symptoms reported.

Distribution

Asia: Turkey
Europe: widespread
North America: Saskatchewan, Manitoba, Ontario, Quebec, Nova Scotia and Prince Edward Island, and in the U.S. States of New York, Connecticut, Massachusetts, New Jersey, and Vermont.

This pest is moved to new areas by transporting infested plants, and by some limited natural dispersal (wind and adult flight).

Biology and Identification

Swede midge can have 4-5 overlapping generations in eastern North America, with adults emerging from overwintered pupae in May, mating, and laying eggs in growing points of host plants. Larvae hatch and feed within plant tissue, causing damage. A generation can take 3-5 weeks depending on temperature and moisture, and insects are active until late September. Optimal temperature for adult activity is 20-25^{o}C.

Swede midge adults can be easily confused with other midges or small flies. Any suspect midges or suspect plant damage should be submitted to the British Columbia Plant Health Laboratory, for identification: www.agf.gov.bc.ca/cropprot/lab.htm

Adult: small fly, 2 mm long, light brown/grey (not yellow), with long delicate legs and long beaded antennae. Wings have short fine hairs on them, and limited venation.

Egg: clear, sausage-shaped, 0.3 mm long, 0.08 mm wide. Eggs laid in growing points of host plants.

Larvae: small larvae clear or milky in colour and darken to pale yellow as they age; are up to 4 mm long, and found in growing points of host plant. Larvae-infested tissue is distorted and watery as a result of the toxic saliva of larvae.

Pupae: mature larvae exit the plant and drop to the soil to pupate. Swede midge overwinters as pupae in the soil.

What You Can Do

Help to prevent Swede Midge from entering B.C. by:

- Using clean cole crop transplants from local plant sources or proven clean sources,
- Following good field sanitation and crop rotation practices, and
- Controlling Brassicae weeds.

Damage

Damage results from Swede midge larvae feeding on new tissue. Symptoms include swelling, distortion, twisting, and scarring on leaves and stems, and 'blind', multi-headed, and diseased plants. Growing points are primarily attacked, which renders transplants unmarketable or kills seedlings. Established plants may not form heads or become diseased as a result of feeding damage and wounding. As plants age, they become less susceptible to attack and damage. There are differences in crop and variety susceptibility. The worst damage has been recorded in Broccoli, gai lan, and Brussels sprouts. More tolerant Broccoli varieties are available. Symptoms can be confused with other factors, such as nutrient deficiency.

Once detected in an area, management for Swede Midge includes cultural practices such as crop rotation, cultivation, and routine pesticide sprays from spring to fall.



Left: Swede midge Larvae present in seedling; Middle: Swelling and distortion in broccoli transplant caused by larval feeding. Right: Severe distortion of head and watery evidence of larvae.



Left: Multiple head formation; Middle: Scarring on cauliflower; Right: leaf distortion (bok choi) from larvae feeding. Photo credits, Hannah Fraser, Ontario Ministry of Agriculture, Food and Rural Affairs, Vineland, ON.

Be on the look-out and report suspicious crop symptoms to:

British Columbia Ministry of Agriculture, Abbotsford, Phone: (604) 556-3001

Tracy Hueppelsheuser
Email: Tracy.Hueppelsheuser@gov.bc.ca

Susan Smith
Email:Susan.L.Smith@gov.bc.ca

For updates please check the Ministry of Agriculture website at:
http://www.agf.gov.bc.ca/cropprot/bulletin.htm