

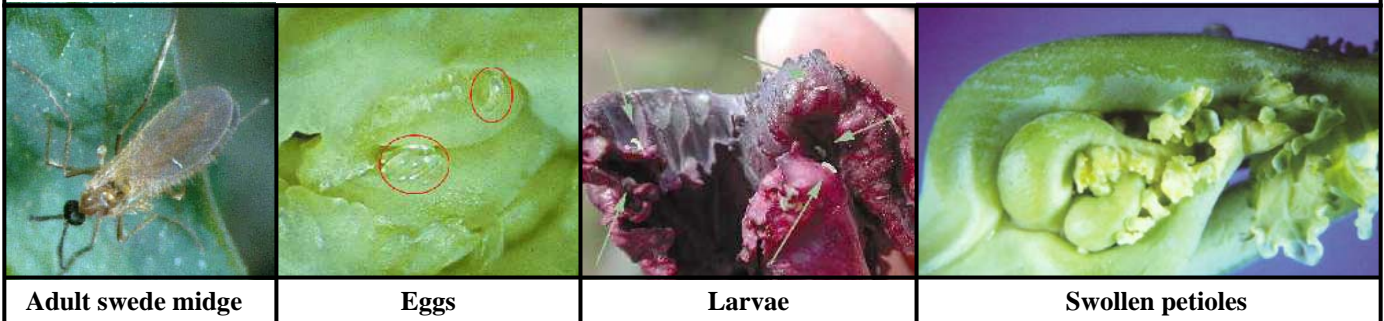
# Swede midge: An introduced pest of crucifer crops

The swede midge (*Contarinia nasturtii*) is an introduced pest of crucifers that has been found in 6 counties in western New York, 16 counties in Ontario and 20 counties in Quebec, Canada. The swede midge was first identified in North America in 2000 in Ontario, Canada. In 2005 swede midge was detected for the first time in Massachusetts in a Northampton garden. Survey activities with the USDA Cooperative Agricultural Pest Survey will continue in 2006 to detect new swede midge populations. A Jackson trap baited with a pheromone (pictured on the right) attracts only male swede midge and allows for detection at low pest densities.



**Hosts:** While swede midge will attack any member of the family Cruciferae, the highest levels of damage have been seen on broccoli, Chinese broccoli (gai lan), Brussels sprouts, cauliflower, Chinese cabbage, and other Asian greens. Cruciferous weeds such as shepherd's purse and wild mustard are also hosts for swede midge.

**Life cycle and description:** Multiple (3-4) overlapping generations have been seen in the field in Ontario, Canada with adult flight from mid-May through September. The swede midge overwinters as a pupa in the soil and emerges in the spring. The adult is a small (1.5-2mm) light brown fly with hairy wings and is indistinguishable from other midges except when examined under magnification. Adults mate within 12 hours of emergence. A single female will lay 100 eggs in her short lifetime (1-5 days). Eggs are very small (0.3mm) and laid on the youngest parts of the plant (e.g. flowers buds, leaf bases). Eggs are transparent when first laid and change to a creamy white color as they mature. The larvae feed in groups in protected areas of the plant tissue typically near the growing point for 10-12 days before dropping to the soil to pupate. Full-grown larvae are 3-4 mm long and lemon yellow in color. Adults will emerge from the soil two weeks after pupation depending on climatic conditions. If conditions are unfavorable for emergence, pupae can remain in the soil for 2 or more years.



Adult swede midge

Eggs

Larvae

Swollen petioles

**Symptoms** that indicate swede midge damage include brown corky scarring especially along petioles, distorted and twisted leaf stalks, death of the growing point resulting in a blind head, crinkled and crumpled heart leaves, deformed and asymmetrical heads, and multi-headed or multi-stemmed plants resulting from destruction of the growing tip. Damage can be mistaken for common physiological or nutritional problems so swede midge larvae or adults need to be found to confirm the diagnosis. The damage Canadian growers had seen since 1996 was mistakenly attributed to nutrient deficiency. If you suspect swede midge larvae are present in a plant, drop the suspect tissue in alcohol or place it in a plastic bag in the sun to force the larvae to exit from the plant tissue.



Crinkled heart leaves

Brown, corky scarring

Swollen, twisted leaf stalks

Multi-headed cabbage

Visit the MA Introduced Pests website (<http://www.massnrc.org/pests>) more information on swede midge

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