



# HORT MATTERS



OMAFRA SPECIALISTS IN HORTICULTURE AND SPECIALTY CROPS

*Bringing the Resources of the World to Rural Ontario*

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## Critically Needed Minor Use Label Expansion Granted For Ranman 400 SC Fungicide For Control Of Downy Mildew On Field Cucurbits

*J. Chaput, Minor Use Coordinator*

The Pest Management Regulatory Agency (PMRA) recently announced the approval of a minor use label expansion for **RANMAN 400 SC FUNGICIDE** for control of downy mildew (*Pseudoperonospora cubensis*) on field cucurbits, crop group 9 (which includes cucumbers, melons, squash, pumpkins and all other field cucurbits) in Canada. RANMAN 400 SC FUNGICIDE a recently new product in Canada, was already labeled for management of late blight on potatoes. This is the 1<sup>st</sup> minor use registration of RANMAN on a crop grown in Canada.

This will provide field cucurbit growers with a much needed disease management tool to manage one of their newest and most challenging disease problems. Downy mildew on field cucurbits has been the subject of several emergency uses in eastern Canada and has highlighted a significant example of the technology gap that exists between Canada and the USA where this disease is also a serious problem.

Ranman 400 SC Fungicide can be applied as a foliar spray on a 7 to 10 day schedule beginning with initial flowering or when disease conditions are favourable at a rate of 0.15 to 0.2 L per hectare in 200 to 600 L water per ha. Ranman 400 SC fungicide should be tank-mixed with Sylgard 309 surfactant at 0.15 L per ha. Use the low rate and long interval as disease preventative treatments or when disease conditions are low. Increase to higher rate and shorter interval under moderate to heavy disease pressure. Ranman 400 SC Fungicide can be applied up to 6 times per season, however after each application of Ranman, be sure to alternate with at least one application of fungicide having a different mode of action for control of downy mildew. **The preharvest interval is 1 day.**

**Ranman 400 SC fungicide should be used in an integrated pest management program and in rotation with other management strategies.** Follow all other precautions and directions for use on the Ranman 400 SC fungicide label.

This minor use label expansion was sponsored by the provincial minor use office of the Ontario Ministry of Agriculture, Food and Rural Affairs in response to emergency use and minor use priorities established by field cucurbit producers, processors, extension personnel and researchers in several provinces.

Furthermore, we also wish to thank the personnel of **ISK Biosciences Corporation** and **UAP Canada Inc.** for their support of this registration and the personnel of the Pest Management Regulatory Agency for evaluating and approving this important pest management tool.

For copies of the new minor use label contact Jim Chaput, OMAFRA, Guelph (519) 826-3539, Elaine Roddy, OMAFRA, Ridgetown (519) 674-1616 or visit [www.uap.ca](http://www.uap.ca).

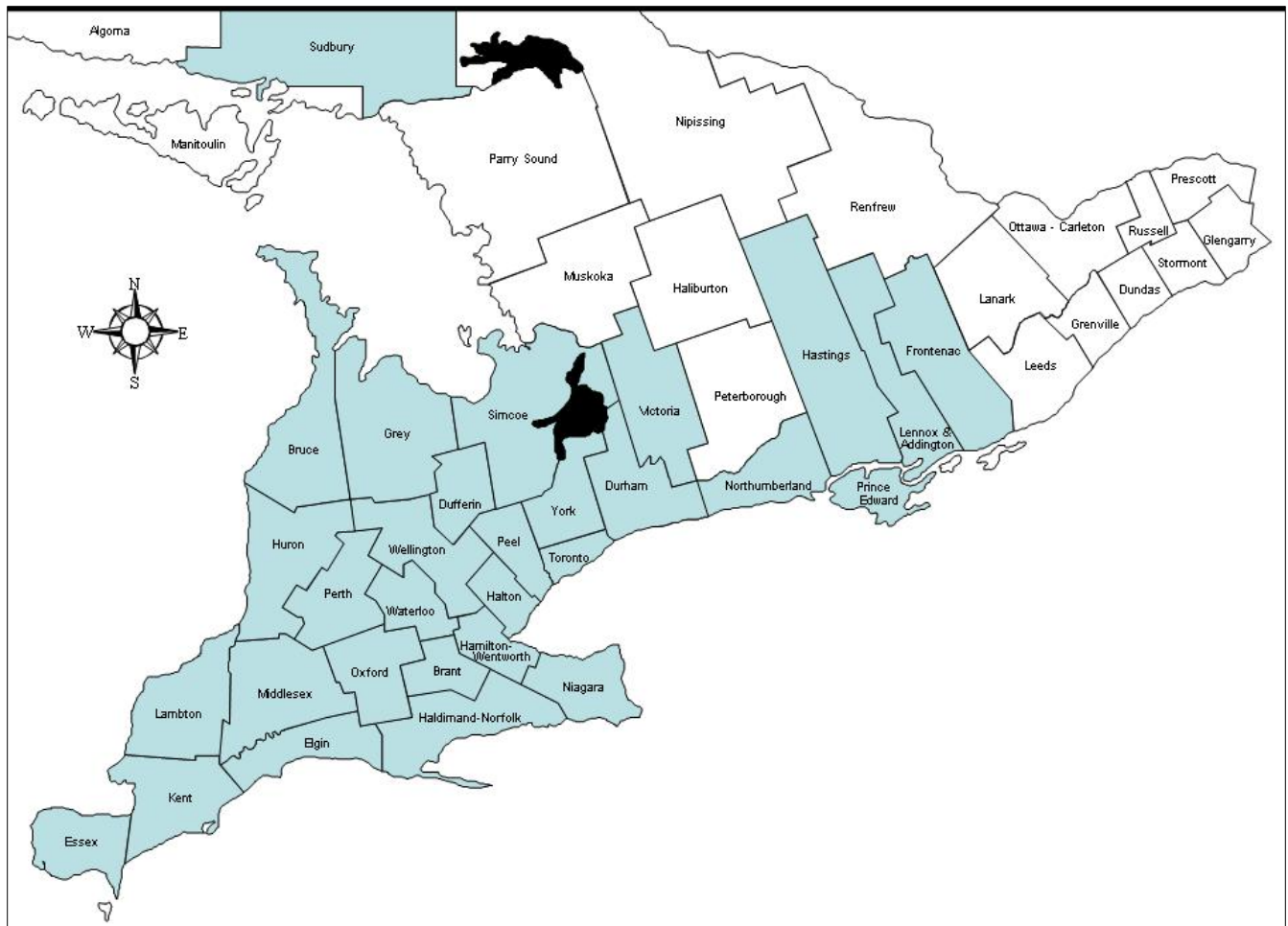
## Swede Midge – 8 New Quarantine Regions

*Jennifer Allen, Vegetable Crop Specialist*

As of June 2007, the Canadian Food Inspection Agency (CFIA) has detected swede midge in 8 new counties:

- Essex
- Chatham-Kent
- Bruce
- Elgin
- Frontenac
- Lambton
- Lennox and Addington
- Perth

30 counties in Ontario are now regulated for swede midge. Below is a map of southwestern and central Ontario with swede midge positive counties shaded in blue. All regulated material from these counties must comply with the CFIA's established phytosanitary requirements.



For more information on the CFIA's phytosanitary requirements visit <http://www.inspection.gc.ca/english/plaveg/protect/dir/d-02-06e.shtml>

# Onion Diseases – What to Look For

Jennifer Allen, Vegetable Crop Specialist

Did you know there are approximately 50 diseases, caused by fungi, bacteria, nematodes and viruses of onion and garlic in North America? In Ontario, the two most commonly seen diseases are botrytis leaf blight and downy mildew.

## Botrytis leaf blight

Botrytis leaf blight is caused by *Botrytis squamosa*. It's characterized by small (1 – 5 mm), discrete gray/white leaf spots that turn light brown as the lesions age (Fig. 1). While older leaves are more prone to leaf blight than younger leaves, the disease tends to be distributed throughout the field. *B. squamosa* requires more than 6 hours of leaf wetness and temperatures below 24°C to become infective. Optimum conditions for this disease are 12 hours of leaf wetness at temperatures of 15 - 18°C.

There are two ways to determine whether or not a preventative fungicide should be applied. The first method is a forecasting system called BOTCAST\*. BOTCAST considers the relationship of weather variables (e.g. leaf wetness, temperature and relative humidity) in determining the probability of sporulation and infection by *B. squamosa*. Each day, disease severity values are determined using weather variables and added to the previous day's value (CSDI) until a threshold is reached, triggering a fungicide application. The threshold commonly used to trigger a spray application is 20 CSDI. If BOTCAST is not available in your area, a spray application decision should be based on field monitoring. If 1 or more active botrytis lesions/leaf on yellow cooking or Spanish onions or 0.5 active botrytis lesions/leaf on green bunching onions are observed, then a fungicide treatment is recommended.

## Downy Mildew

Downy mildew is caused by *Peronospora destructor*, a disease that usually occurs in patches of the field. During early disease development a violet/gray velvety looking growth develops that kills infected tissue (Fig 2). Affected leaves turn yellow and collapse. For infection to be initiated, *P. destructor* needs leaf wetness of 2 – 6 hours at 3 - 14°C and a relative humidity greater than 80%. As soon as temperatures rise and relative humidity drops, fungal growth is arrested.

Similar to botrytis leaf blight, a forecasting system has been developed to predict the risk of downy mildew. The system is called DOWNCAST\* and is available in some areas of the province. DOWNCAST considers air temperature, leaf wetness and relative humidity in assessing the risk of downy mildew infection. In areas where DOWNCAST is not available it is recommended that protective fungicides be applied when cool, humid weather conditions are forecasted.

\* BOTCAST and DOWNCAST data are available weekly in the Cole Crop, Root, Bulb and Leafy Vegetable Crop Update. To subscribe visit [www.ontario.ca/crops](http://www.ontario.ca/crops) and click on the crop and pest updates feature.



Fig.1 Botrytis leaf blight of onion.

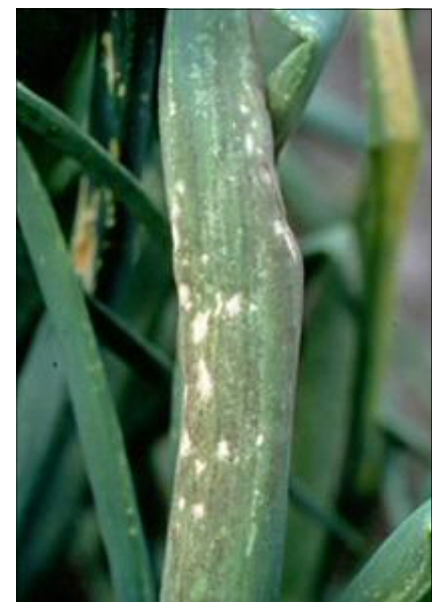


Fig. 2 Downy mildew of onion.



Fig. 3. White lesions of botrytis leaf blight and purple sporulation of downy mildew.

### Control Options

There are a number of fungicides registered for use on onions; however, not all products work for both diseases. Although it's not unusual to find both diseases on a given onion plant (Fig. 3) it's really important to differentiate between botrytis leaf blight and downy mildew. For example, Bravo 500 offers control of botrytis leaf blight but not downy mildew while Aliette WDG offers control of downy mildew, not botrytis.

For more information visit:

<http://www.omafr.gov.on.ca/english/crops/facts/95-063.htm>

[http://vegetablemdonline.ppath.cornell.edu/factsheets/Onion\\_Botrytis.htm](http://vegetablemdonline.ppath.cornell.edu/factsheets/Onion_Botrytis.htm)

[http://vegetablemdonline.ppath.cornell.edu/factsheets/Onions\\_Downy.htm](http://vegetablemdonline.ppath.cornell.edu/factsheets/Onions_Downy.htm)

## Hairy Nightshade (*Solanum sarachoides*) a Host of Potato Late Blight

*Eugenia Banks, Potato Specialist*

Potato growers should scout their fields for hairy nightshade, an annual weed in the potato family. This weed looks similar to potatoes, and in some areas is known as potato weed. However, the leaves are much hairier and the flowers are smaller.

The first true leaves of hairy nightshades have wavy edges and prominent veins. Stems, leaf veins, and margins are conspicuously covered with hairs about 1-2 mm long that are sticky to touch. Berries are green or yellowish brown when mature. Mature plants reach about 2 feet (60 cm) in height.

Small, hairy nightshade plants can be confused with lamb's quarters. Look for the wavy first true leaves to make a correct identification. It is very easy to identify this weed at the flowering stage. It is also similar to Eastern black nightshade, which has smooth green leaves with purple on the undersides.

Hairy nightshade is found in southern Ontario. Because this weed is controlled by some of the same herbicides used for potatoes and tomatoes, it is usually found in areas surrounding potato and tomato fields, on both mineral and muck soils.

**It is important to eliminate hairy nightshade growing close to potato fields to avoid having a source of late blight spores all season long.**



Hairy nightshade plant



Hairy nightshade flower