

Suggestions for Anthracnose Management in Strawberries, 2023

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These guidelines were developed to address the presence of anthracnose resistance to group 11 fungicides in Ontario, and the limited products available to growers. This includes the changes to the captan label for berry growers including a 6-day REI and a maximum of 6 applications.

In Ontario, strawberry anthracnose has been confirmed resistant to FRAC group 11 fungicides, also known as strobilurins. A survey conducted in 2021 -2022 on 13 farms from across the province confirmed that all anthracnose samples were resistant to group 11s through a genetic mutation. Due to this, we do not recommend using the following products for anthracnose management - Cabrio (11), Evito (11), Pristine (11+7), Merivon (11+7), Quadris Top (11+3) and Luna Sensation (11+7). Please see the [Fungicide Resistance Action Committee \(FRAC\) guidelines](#) for group 11 resistance management. If you want to test for resistance to a group 11 product in your field, contact Erica Pate or Katie Goldenhar, OMAFRA (contact information below). Wherever possible, include a group M fungicide in your program for resistance management and to expand the spectrum of disease control.

Results from the anthracnose resistance survey and fungicide efficacy trial in 2021 can be found here <https://onfruit.ca/2022/03/31/anthracnose-fruit-rot-management-research-update/> .

Integrated Management of Anthracnose Guidelines:

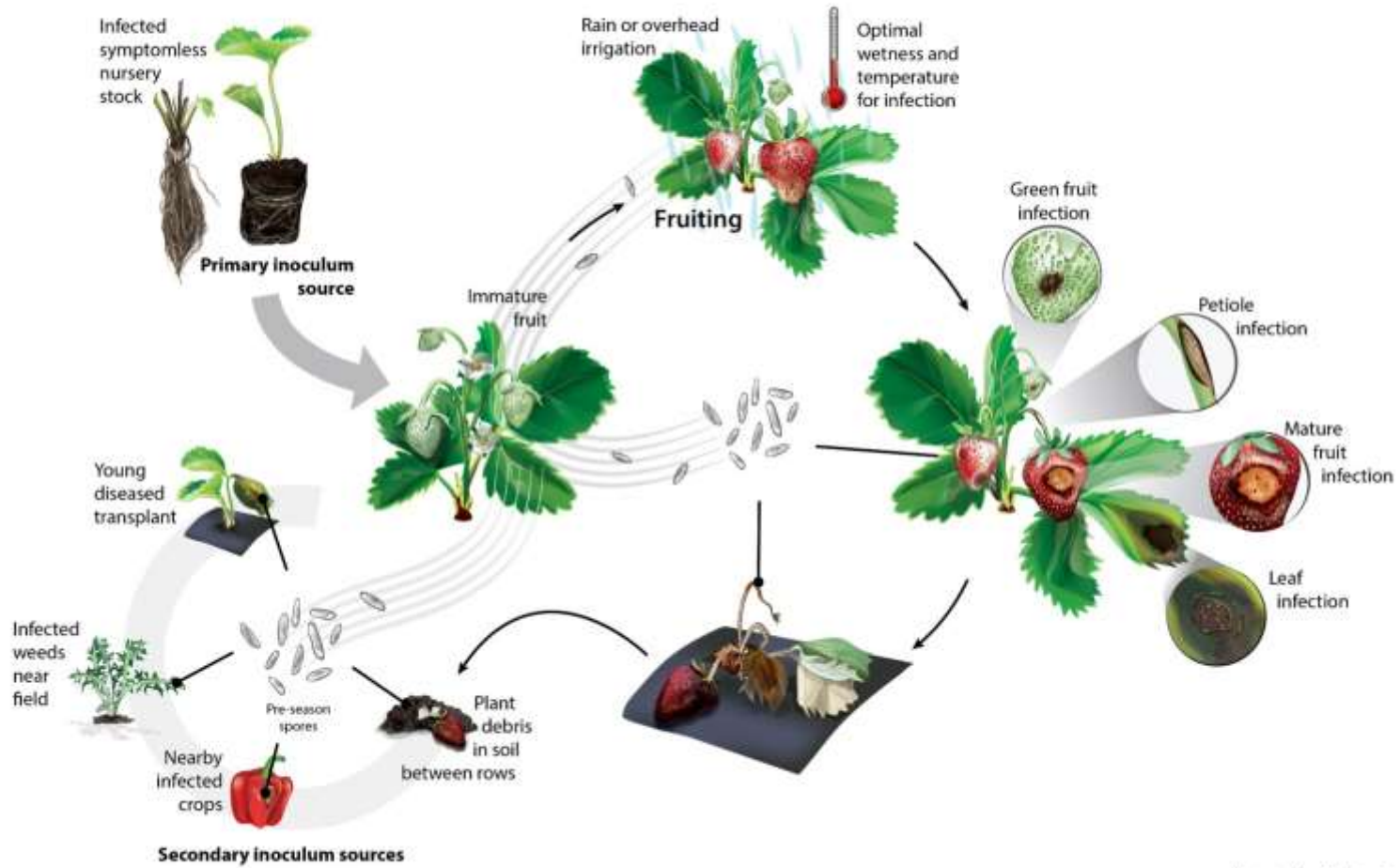
Anthracnose will be challenging to control in day-neutral strawberries with fungicides alone. Include other integrated anthracnose management practices such as:

- Some new cultivars (eg. Keepsake) have tolerance or resistance to anthracnose – try these out on your farm
- Start new fields with clean plants from an accredited program. Plug plants from field-grown tips carry a higher risk
- Don't let the plant canopy get too thick. Nitrogen management is very important. Avoid over-application of nitrogen
 - The source of nitrogen can also have an effect; avoid ammonium forms of nitrogen
- Apply chlorothalonil or captan before bloom for Botrytis management
- As much as possible apply broad spectrum fungicides (group M) during bloom

- Use a disease prediction model for timing fungicide sprays
- During harvest your options are more limited because of the longer REI and PHI intervals. Options include:
 - Switch/Button (group 12+9), cyprodonil + fludioxonil
 - Miravis prime (group 7+12), pydiflumetofen + fludioxonil
 - Diplomat (group 19), polyoxin D zinc salt
- Do not rely on group 11 products
- Remove diseased fruit from plants and if possible, remove from field
- Work in older fields, and/or diseased fields last
- Sanitize between fields (eg. equipment, tools, hands)
- After crop removal, incorporate residue into the soil to allow for breakdown of residue

Anthracnose on Strawberry

Colletotrichum acutatum



Illustrated by Madeline Dowling
phytographics.com

Examples of fungicide programs are below:

June Bearing Strawberries

Pre-bloom: 2 applications of chlorothalonil (M) for Botrytis control.

Bloom: Captan (M), Switch/Button (9+12) or Miravis Prime (7 + 12), Captan (M).

Harvest: Spraying for anthracnose after bloom or during harvest is only needed if warm, wet weather conditions continue, particularly on susceptible cultivars (Mira, Annapolis, Orleans, St Laurent). Rotate between captan and Switch/Button or Miravis Prime.

Diplomat is registered for anthracnose control however under high disease pressure, Diplomat alone did not provide acceptable control. Tank mix Diplomat with compatible fungicides for additional anthracnose control where permitted. Group 3 fungicides may provide suppression of anthracnose during lower disease pressure but have not shown to be effective alone when tested under high disease pressure. Always refer to label for PHIs.

Day-Neutral Strawberries

A disease prediction model can be used to potentially reduce the number of sprays when disease conditions are not favourable for anthracnose development. To accurately predict anthracnose infections, an on-farm weather station with a leaf wetness sensor is advised. If you are interested in setting up a model with your own data, contact Erica or Katie.

In situations where pressure is high and a lot of anthracnose damage is present workers should strip off any diseased blooms or berries (see pictures below), spray captan, and begin harvest again in 6 days.

Overwintered day-neutrals often have the highest disease pressure, compared to spring-planted, because the disease overwinters on the plants.

Pre-bloom: 2 applications of chlorothalonil (M) for Botrytis control.

Bloom – 6 days pre-harvest: Captan (M) alone. Use up to 4 applications at this timing and save 2 applications for the gap before the summer crop if continuing to harvest. Maximum of 6 applications of captan per year.

Harvest: Switch/Button (9+12) and Miravis Prime (7 + 12) are the most effective products. Use Switch/Button or Miravis Prime during periods when conditions are highly favourable for anthracnose infection. Note there is a maximum of 3 applications of Switch/Button per year, and 2 applications of Miravis Prime per year. Do not make more than 3 applications of fludioxonil-containing products per year (Switch, Button, Miravis Prime, Scholar). Resistance Management Label Statement: After 2 applications of SWITCH 62.5 WG/Button, alternate with another fungicide with a different mode of action for 2 applications.

Diplomat is registered for anthracnose control however under high disease pressure, Diplomat alone did not provide acceptable control. Tank mix Diplomat with compatible fungicides for additional anthracnose control where permitted. Group 3 fungicides may provide suppression of anthracnose during lower disease pressure but have not shown to be effective alone when tested under high disease pressure. Always refer to label for PHIs.

Apply captan during a gap in production.

Crop Tolerance & Residue Notes:

Do not make more than three applications of fludioxonil-containing products (eg Switch, Button, Miravis Prime, Scholar) on strawberries per year.

Do not tank-mix Agri-mek with chlorothalonil (Bravo or Echo), or captan. If applying Agri-mek make sure to wait 1 day before applying chlorothalonil or captan.

Do not apply captan within 14 days of an oil application. Do not apply chlorothalonil (Bravo or Echo) within 10 days of an oil application.

A list of registered products for anthracnose control can be found on the Ontario Crop Protection Hub:

www.ontario.ca/cropprotection

Anthracnose fruit rot on berries and blooms:



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