

Managing *Phytophthora* on Cantaloupe, Muskmelon and Watermelon

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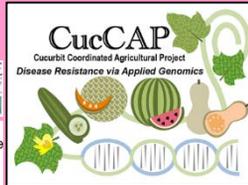
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Historically, Michigan producers grow over 75,000 acres of vegetables that are susceptible to *Phytophthora capsici*, including cucumber, zucchini, summer and winter squash, watermelon, cantaloupe, pumpkin, pepper, eggplant, tomato, and succulent bean. The pathogen may overwinter in the soil and persist for >10 years. *Phytophthora capsici* is favored by rain and warm temperatures and spreads readily via water. It has been found in irrigation ponds and surface water sources.

Recognizing *Phytophthora* on MELON

- Black or brown roots and crowns.
- Wilted plants.
- Water-soaked lesions on fruit, stem, and leaves.
- White, “powdered sugar” layer of spores on fruit.

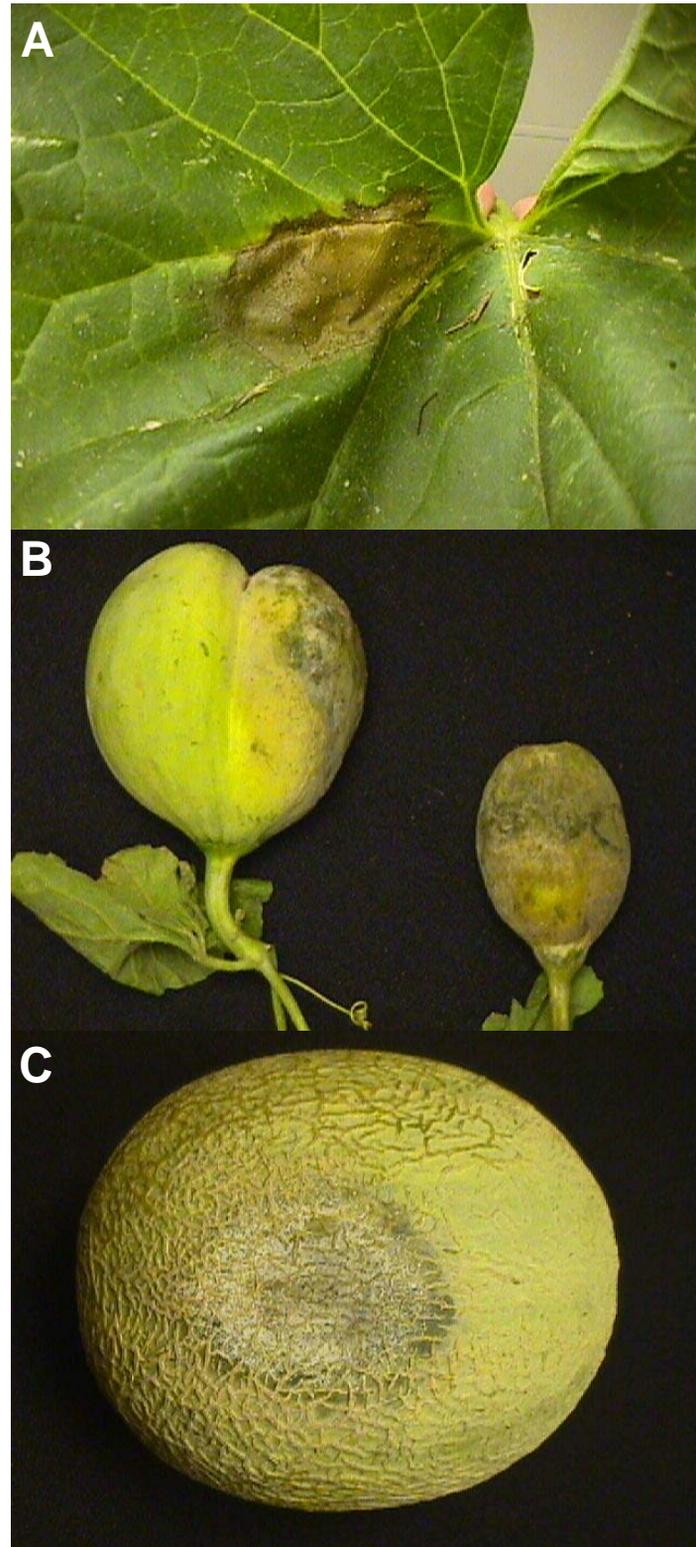
The roots, crowns, stems, and fruits of melon are susceptible to *Phytophthora*. Most often, the first noticeable sign of *Phytophthora* is water-soaking of the crown and roots that are black or brown in color, and the plant appears wilted. Fruit rot symptoms include water-soaked lesions and a white, “powdered sugar” layer of spores.

It is possible to harvest healthy-looking fruit that may deteriorate in transit or on grocers’ shelves. This happens because fruit symptoms can take several days to appear once infection has occurred.

A sure way to avoid a disease outbreak is to take preventive measures before a problem occurs. Do not plant crops susceptible to *Phytophthora* in a field with a history of the disease.

The best method to detect disease is to scout fields early and often, especially during periods of wet and warm temperatures. If *Phytophthora* is spotted in the field, remove the diseased plants and the healthy-looking plants that border the diseased area. Never dump the diseased fruit back into a production field. Remember to clean all equipment that has been in the infested field before moving to another field.

Plant melons on raised beds at least six inches in height when possible. Plant in well-drained fields. Drip irrigation from a well is recommended.



A, *Phytophthora* lesion on a cantaloupe leaf. **B**, immature cantaloupe fruits infected with *Phytophthora*. **C**, water-soaking and white spores on a mature cantaloupe fruit.

Management Strategies

- Plant into well-drained, tilled fields.
- Use raised beds and drip irrigation.
- Avoid using surface water for irrigation.
- Irrigate sparingly from a well.
- Rotate crops.
- Scout fields regularly for *Phytophthora*.
- Remove diseased plants and adjacent healthy plants.
- Apply fungicides preventively and at short intervals when needed.
- Powerwash equipment after it has been in infested fields.
- Do not dump diseased culls in production fields.

Fungicides can help manage *Phytophthora*; apply early and frequently as a preventive measure. While mefenoxam (Ridomil Gold, Ultra Flourish) is not labeled for *Phytophthora* on melons, it is labeled for control of *Pythium* and can be applied to melons by injection through drip irrigation. However, in some



A-B, water-soaked *Phytophthora* lesions with white spores on watermelon fruits, and B, wilted vines.

areas of Michigan mefenoxam is no longer effective because some *Phytophthora* have become resistant to it. Rotate among FRAC groups to delay development of resistance.

Preferred *Phytophthora* Fungicides for MELON

Product	A.I.	FRAC	Comment
Orondis Ultra	oxathiapiprolin/ mandipropamid	49/40	Make no more than 2 sequential applications before rotating to a fungicide with a different mode of action (FRAC). Use either soil applications of Orondis or foliar applications of Orondis Ultra A but not both for disease control. Do not use for more than 1/3 of the total foliar fungicide applications.
*Presidio 4SC	fluopicolide	43	Use in a fungicide tank mix.
Revus 2.08SC	mandipropamid	40	Include surfactant.
Ridomil Gold	mefenoxam	4	Fungicide resistance has been detected in <i>Phytophthora</i> where mefenoxam has been used frequently.

Phytophthora 'B' Team for MELON

Forum 4.18SC	dimethomorph	40	Use in a fungicide tank mix.
Gavel 75DF	mancozeb/ zoxamide	M03/22	Relatively long PHI.
Ranman 400SC	cyazofamid	21	See label about surfactant.
*Zampro 4.4SC	ametocradin/ dimethomorph	45/40	

***Presidio and Zampro are registered for application via drip or as a foliar spray.**

Remember that the pesticide label is the legal document on pesticide use. Read the label and follow all instructions closely. The use of a pesticide in a manner not consistent with the label can lead to the injury of crops, humans, animals, and the environment, and can also lead to civil or criminal fines and/or condemnation of the crop. Pesticides are good management tools for the control of pests on crops, but only when they are used in a safe, effective and prudent manner according to the label.

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