STRAWBERRY DISEASES

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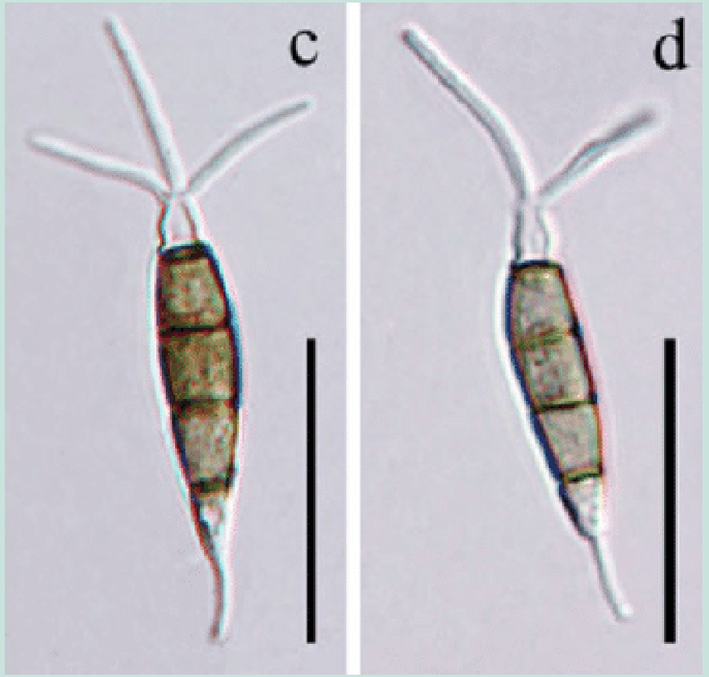
Neopestalotiopsis fruit rot and leaf blight

- Emerged in US in mid-2010s
- Initially identified in FL, found mid-Atlantic in 2020
- Potentially arrived to US through contaminated plant material

- Prior to detection in the USA, Neopestalotiopsis has long been considered a “secondary invader” that only infects weakened or dead plant tissue

Neopestalotiopsis fruit rot and leaf blight

- In contrast to other Pestalotiopsis pathogens, new species appears more aggressive and destructive on strawberry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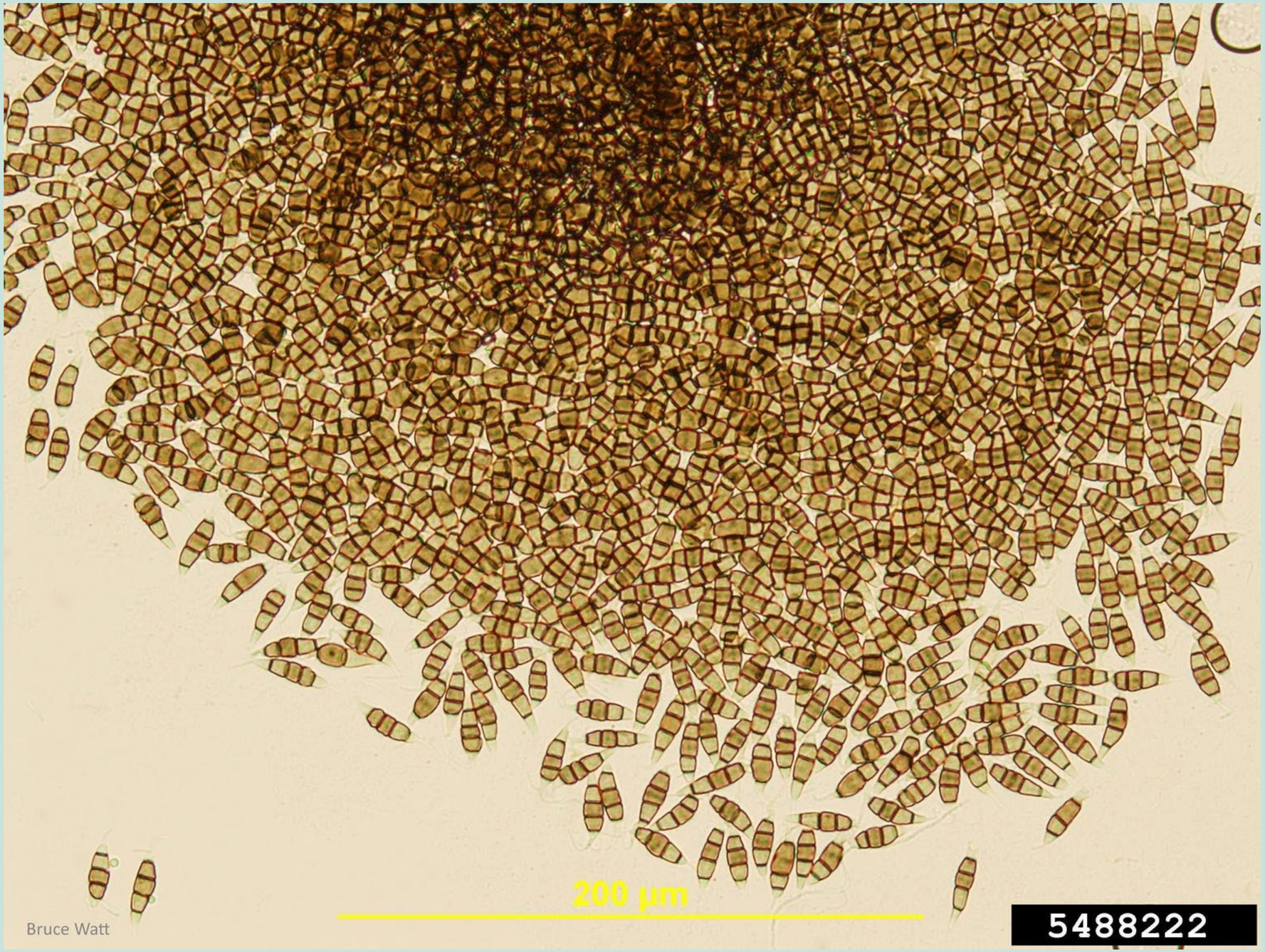

200 µm
Bruce Watt
5488222

Neopestalotiopsis symptoms

- Small dark leaf spots on leaves that can expand into larger lesions

- Can cause fruit rot both pre- and post-harvest

- Whole plant death

Favorable Environment

=

Pathogen

Susceptible Host

Environmental Conditions

- Spreads through contaminated plant material, wind, and water
- Thrives in warm, humid conditions (77 - 86F)
- Prolonged wet periods
- Saw crop losses in 2020 in DE
- By 2021, less impact

Environmental Conditions

Cultivar Susceptibility

Matted-row Indiana study

- Florida Brilliance, Florida Sensation, Camino Real, and Florida Radiance were among the most **susceptible** cultivars evaluated in these trials
- Several short-day cultivars, including AC Valley Sunset, Darselect, Earliglow, Flavorfest, Galletta, Honeoye, Jewel, and Sonata, remained **asymptomatic** in the trials

Neopestalotiopsis disease management

Cultural

- Crop rotation
- Sanitation
- Pruning infected plant parts
- Adequate plant spacing
- Less susceptible cultivars

Neopestalotiopsis disease management

Chemical

- No fungicides currently labeled

Most effective:

- Switch 62.5 WG (fludioxonil + cyprodinil)and Thiram SC (thiram) most effective

Also offer disease control:

- Bravo Weather Stik (chlorothalonil)
- Manzate Pro-StickTM (mancozeb)
- Omega (fluazinam)
- Miravis Prime (fludioxonil + pydiflumetofen)

Neopestalotiopsis Management

Follow these steps this year:

First:

- Talk to the plug producer/nursery directly and ask about problems and plant source
- Check your plants when you get them to identify problems
- Do NOT plant any plants that show disease symptoms (True for ALL diseases)
- Sanitate your planting material (True for ALL diseases)
- Make sure your planting material is planted properly!
- Apply Switch or Thiram only if plants have symptoms.
- While the disease progresses more slowly on some cultivars than others, no cultivar is resistant.

Phytopythium root/crown rot

- 2018-2019 in FL, fields showed 50% mortality on ‘Florida Radiance’ strawberry (Fragaria × ananassa) in six commercial farms
- Plants wilting and collapsing plants had reddish-brown discoloration in the crown, root rot, and a decline in overall plant health.
- Pythium-like organism was consistently isolated from symptomatic crowns on the selective medium
  - *Phytopythium vexans* is a soil-borne oomycete pathogen
  - It exhibits intermediate morphological features between Phytophthora and Pythium

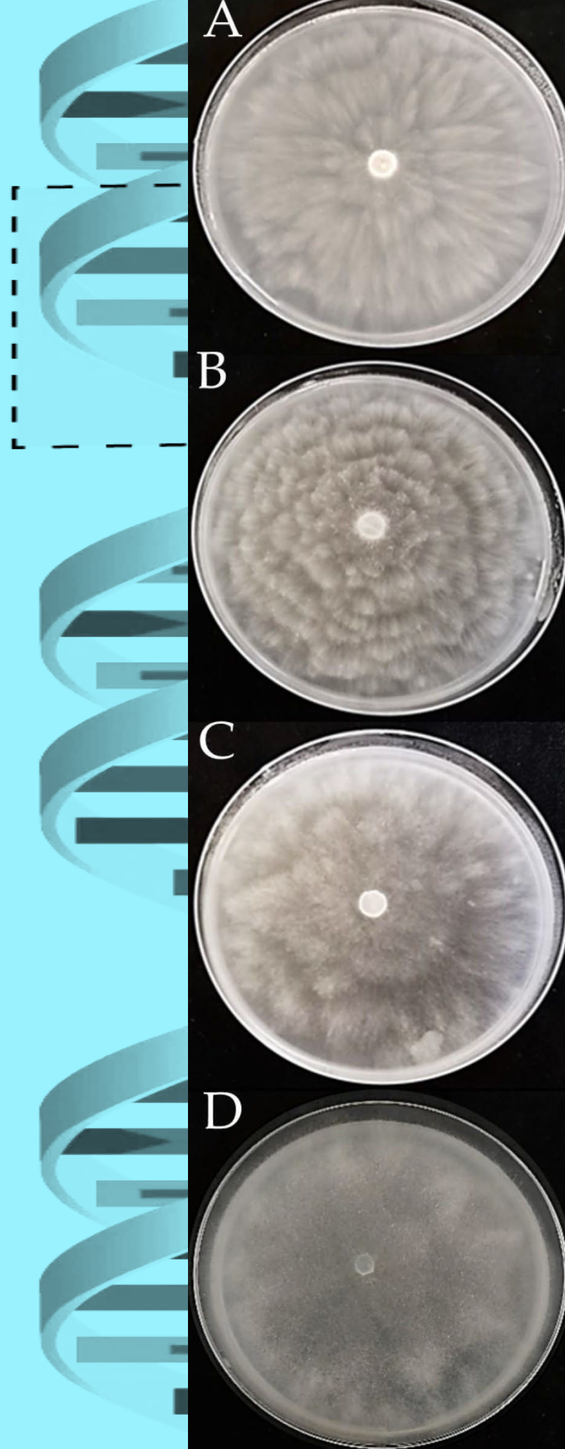
First Report of Crown Rot Caused by *Phytopythium helicoides* on Strawberry in the Americas - M. V. Marin, T. Seijo, J. Mertely, and N. A. Peres

PHYTOPHTHORA

PHYTOPYTHIUM

Phytopythium root/crown rot

- In 2020 and 2021, Flavorfest plants were going down during plug production in PA/MD/DE
- Growers were reporting plantings of Flavorfest plug plants going down during the fall within a month or two of planting
- We were concerned this was the same *Phytopythium vexans* seen in FL
- Our molecular results showed this to be a different Phytopythium species, *Phytopythium helicoides*
- Suspect this is a weak pathogen



Phytopythium disease management

- Improve soil drainage
- Crop rotation
- Healthy planting material
- Mefenoxam (Ridomil Gold) and metalaxyl (various formulations) through drip
- Best applied in the fall soon after planting and when overhead watering for plant establishment is complete
- Early spring application is also useful when rapid new plant growth starts

THANK YOU

FOR YOUR ATTENTION