

# **Strawberry, Colletotrichum and Neopestalotiopsis: Expanding worldwide**

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Worldwide Expertise for Food & Flowers

# Strawberry, root disease / rhizome

- ✦ Phytophthora cactorum, fragariae
- ✦ Pythium
- ✦ Fusarium
- ✦ Rhizoctonia
- ✦ Cylindrocarpon
- ✦ Pestalotiopsis → **Neopestalotiopsis**
- ✦ **Colletotrichum**
- ✦ Verticillium
- ✦ .....

# Colletotrichum at propagation field

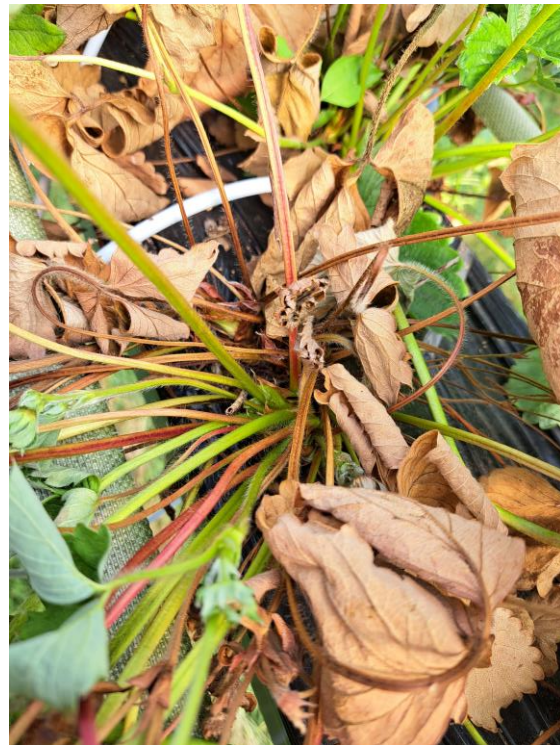


# Colletotrichum: rhizome infection at production



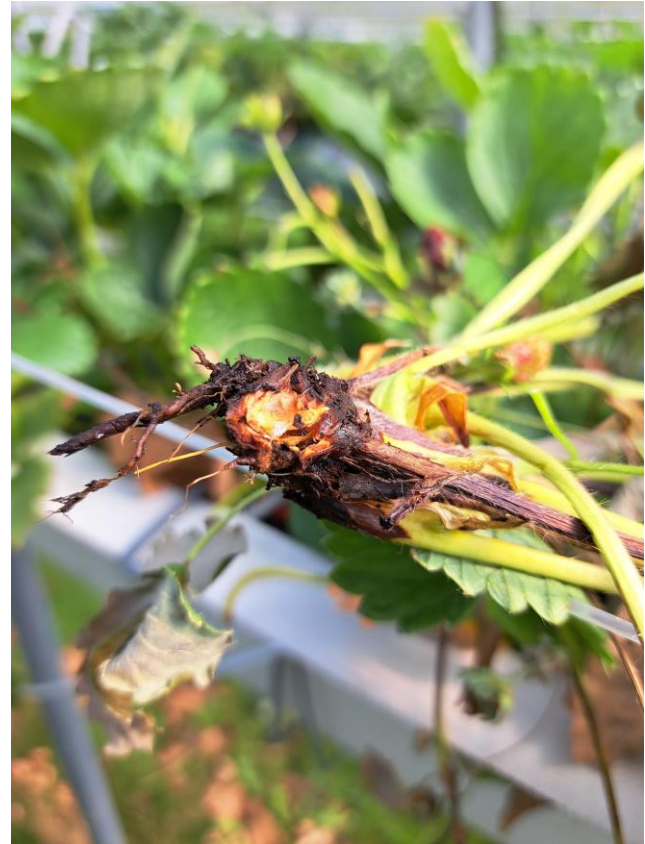


# Colletotrichum: production cultivation



# Colletotrichum: production cultivation

Starts with one crown, later on the whole plant can be infected.



## Colletotrichum: leave stems



C. acutatum:  
black rot on fruit





## C. acutatum: at cultivation field under straw



# Colletotrichum

- ✧ Moisture
- ✧ High temperature
- ✧ Splashing
- ✧ Circumstances
- ✧ In Holland for many years; *C. acutatum*
  - Leaves
  - Fruit
  - Runners in soil-grown plant material
- ✧ Now coming up: *C. fragariae*
  - Most in crown
  - Not much on leaf or fruit

# Colletotrichum

- ✧ C. acutatum worldwide
- ✧ C. fragariae USA, coming up in the whole world
- ✧ C. nympphaeae Europe
- ✧ C. lineola
- ✧ C. godetiae
- ✧ C. fioriniae
- ✧ C. fructicola Asia
- ✧ C. siamense
- ✧ C. gloeosporioides

# Colletotrichum

→ Start clean ←

## ✦ Solutions

- covered crops
- Change way of plant propagation

## ✦ Strong plants:

- Varieties, sensibility
- Clean mother material!
- Plant sauna 90% reduction?
- Soil or substrate; Trichoderma



# Colletotrichum

Chemical future? **No**

- Strobilurines: azoxystrobin, trifloxistrobin, pyraclostrobin
- SDHI: fluopyram, boscalid, fluxapyroxad
- Fruit, leaves, runners
- Not inside the plant material

# Neopestalotiopsis

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✧ Pestalotiopsis

=

✧ Neopestalotiopsis

# Neopestalotiopsis publiced oct '24 2

- ✦ **Managing Neopestalotiopsis pathogen in strawberries**
- ✦ Pestalotiopsis-like species have been reported affecting strawberry worldwide. Recently, severe and unprecedented outbreaks have been reported in Florida commercial fields where leaf, fruit, petiole, crown, and root symptoms were observed, and yield was severely affected.

# Neopestalotiopsis

- ✦ Isolates from both groups were pathogenic to strawberry roots and crowns. However, the new *Neopestalotiopsis* sp. proved **more aggressive** in fruit and leaf inoculation tests, confirming observations from the recent outbreaks in commercial strawberry fields in Florida.



# Neopestalotiopsis leaf



# Neopestalotiopsis crown



# Neopestalotiopsis fruit





# Neopestalotiopsis?





# Neopestalotiopsis?



# Neopestalotiopsis?



# Neopestalotiopsis

- ✦ Crown infections cause wilting and death of plants
  - ✦ Infected planting stock mostly
  - ✦ Persist in soil over the year
  - ✦ Spreading by rain, wind and hands (wetness)
- 
- ✦ Not known resistant cultivars (USA)
  - ✦ Removing infected plants reduces the spreading
  - ✦ No working on plants under wet conditions

# Neopestalotiopsis

- ✦ No Oömyceet like Phytophthora/Pythium, no working of those chemicals (Paraat, Previcur Energy, Proplant, Aliette, Polyversum, fosfonates)
- ✦ Ascomyceet
  - DMI: tetraconazool, tebuconazool, hexaconazool
  - Holland fluazinam allowed; not proven to be effective
  - Switch. Not in the soil
  - Worldwide: thiram. Insecure for the future.

# Neopestalotiopsis, how to react

- ✧ Grow strong plants. Fungus not very aggressive?
- ✧ Only plant analysis convince type of fungus
- ✧ Start healthy plants
- ✧ Mother plants plant sauna (60%)
- ✧ Prevent splashing water.... Think about how to make young plants
- ✧ Remove infected plants will reduce spreading
- ✧ Do not work under wet conditions



Thanks for your attention!

