Blueberry Diseases
Pick TN

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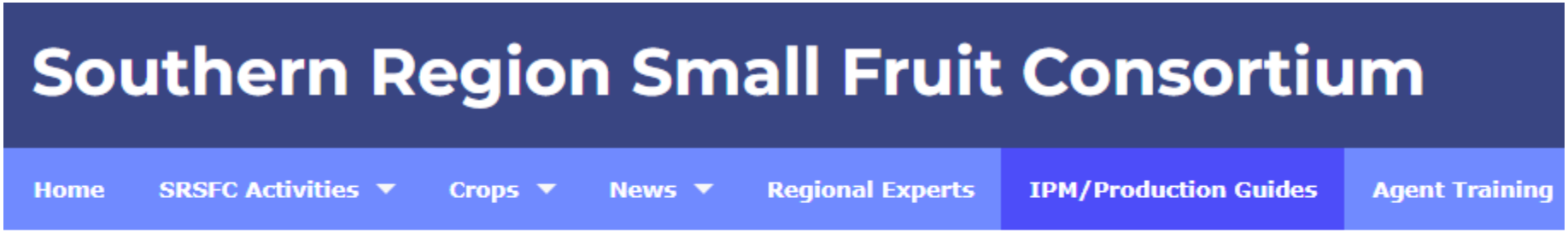
Since 1963, the IR-4 Project (IR-4) has been the primary entity in the United States to **facilitate registrations of conventional pesticides and biopesticides on Specialty Food crops (fruits, vegetables, nuts, herbs, spices) and non-food Environmental Horticulture crops**.

Resources

www.smallfruits.org



IPM/Production Guides

Content on this page is available in PDF format unless otherwise indicated.

Blueberries

- 2022 Southeast Regional Blueberry Integrated Management Guide ***NEW***
- 2021 Southeast Regional Organic Blueberry Pest Management Guide
- Southeast Regional Blueberry Horticulture and Growth Regulator Guide

2022 Southeast Regional Blueberry Integrated Management Guide

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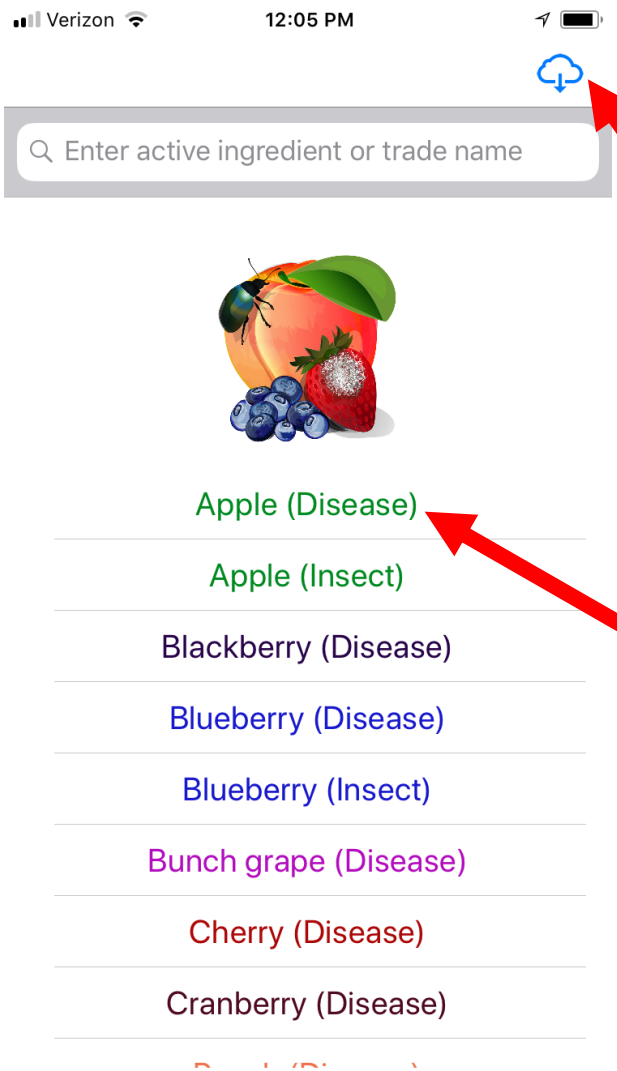
“MyIPM” – free mobile app

- MyIPM – an app designed to help commercial growers make disease management decisions
- useful to help identify pests & diseases, especially on-the-go

“MyIPM” – free mobile app

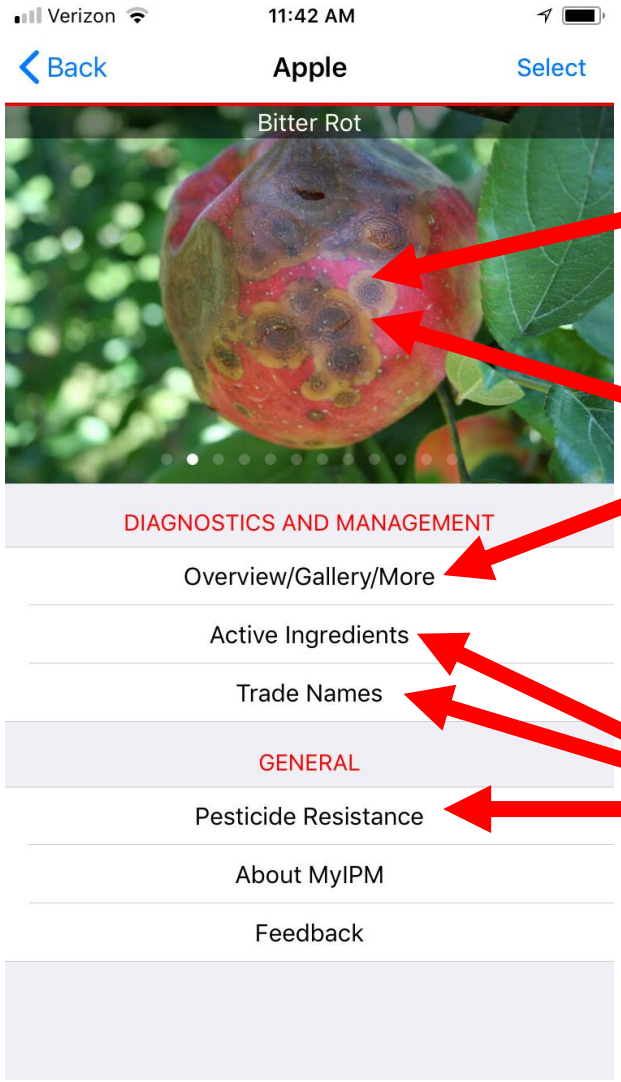


Select the Cloud icon to choose content to download

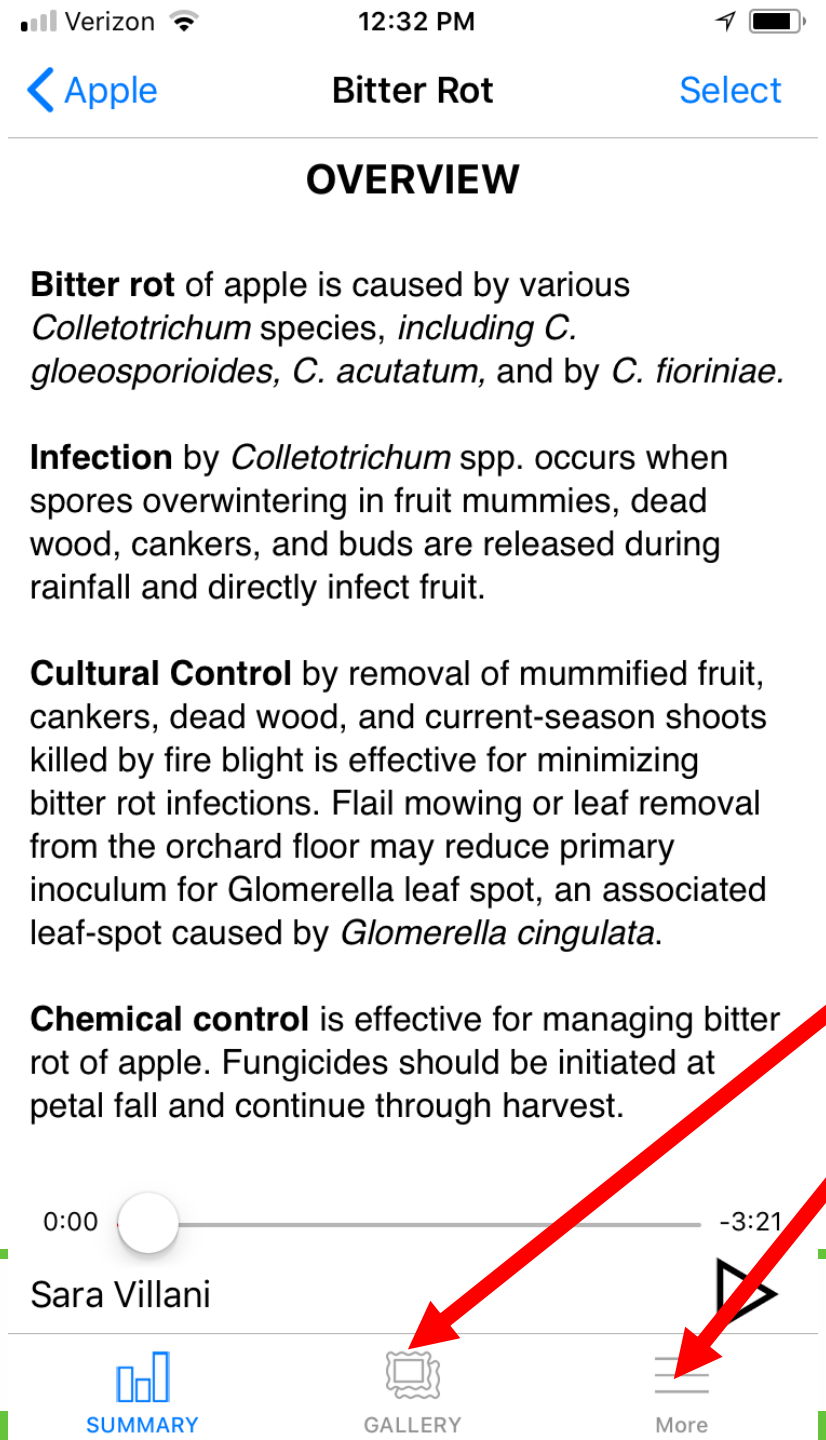
- you can download all content, or only topics you want

Once you’ve downloaded your topics, click one to see content

“MyIPM” – free mobile app



- Swipe photos left/right to see different diseases or pests
- Click on picture or Overview/Gallery/More for photos and management info
- Active Ingredients, Trade Names, & Pesticide Resistance geared towards commercial growers



MyIPM Mobile App

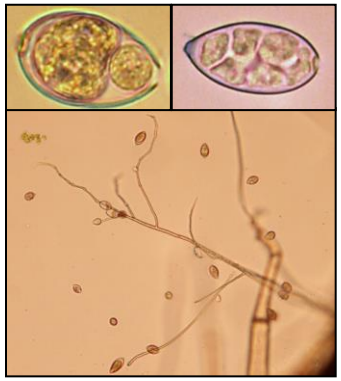
Example of "Overview" screen including

- Pathogen name
- Disease cycle
- Cultural control strategies
- Chemical control strategies
  - Chemicals geared towards commercial growers
- Click "GALLERY" to see more photos
- Click "More" for additional info

The Disease Triangle

Host

Disease



Pathogen

Environment

General considerations – cultural practices

- Cultural practices are **very important** for fruit growers
  - Variety selection (disease resistance when available)
  - Site selection (good sunlight and drainage)
  - Pruning and crop maintenance (promote air flow – remove diseased material)

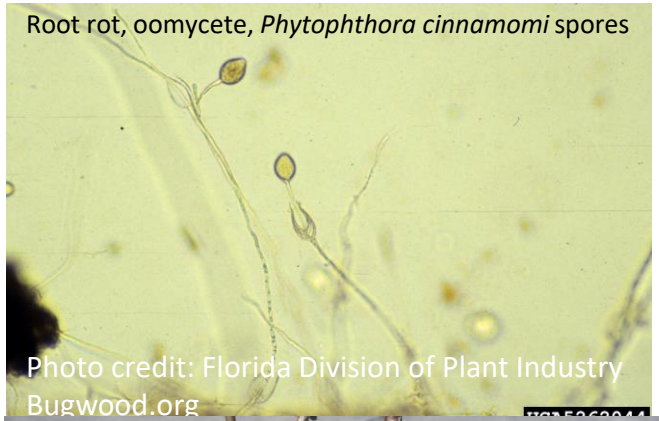
Do I really need to spray all that?

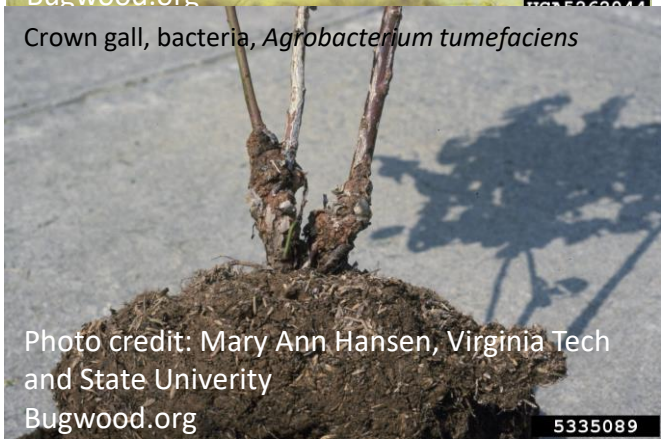
- Cultural practices minimize the need for pesticide applications, but they may still be needed
  - In humid climates like TN, cultural practices are often not enough to completely manage diseases

Blueberry disease management

General considerations

- Site selection is important to avoid disease problems like Phytophthora root rot
  - Select sites with well drained soil and avoid low-lying areas
- Start with high-quality disease-free planting material
  - Do not plant material showing symptoms of root rot or crown gall
  - Planting material should be virus-free
    - Tissue-cultured plants are likely to be virus-free
- Maintain optimum plant health to avoid certain disease issues
  - *Botryosphaeria* stem blight is commonly found in the environment and can be hard to avoid
  - Limit crop injury, reduce crop stress (proper nutrition), avoid N application after late August to allow plants to harden off





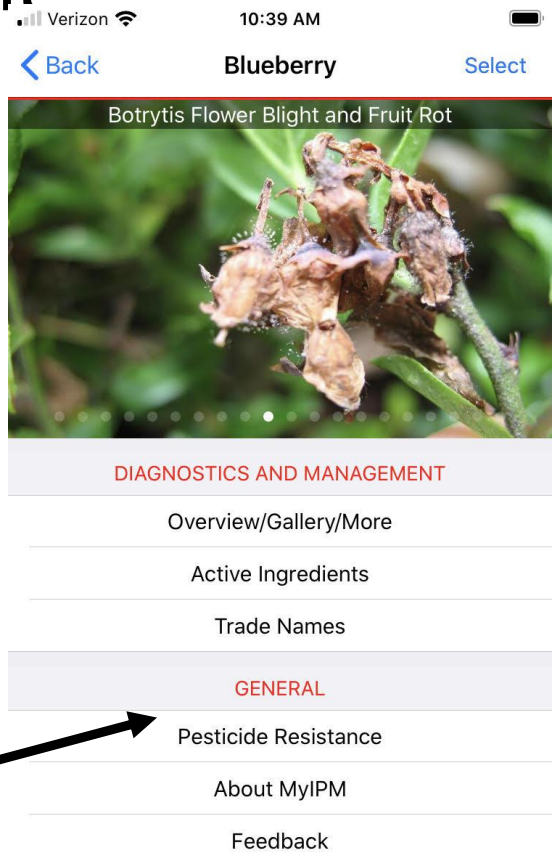
Blueberry disease management

- Cultural practices
  - Remove mummy berries from plants and ground as much as possible
    - Mummy berry (*Monilinia vaccinii-corymbosi*) can be a serious problem (shoot blight and fruit rot)
    - Mummy berries act as overwintering inoculum & should be raked to row middles and buried or covered by mulch
      - Do not over-mulch, this can damage plants
  - Prune out cankers and dead wood to reduce incidence of canker diseases (*Phomopsis* & *Botryosphaeria*)
  - Prune plants to promote good air movement and spray penetration
    - Depending on disease pressure, 10 or more spray applications may be needed
    - Proper pruning helps maximize fungicide efficacy and reduce risk of resistance development

Blueberry disease management

Become familiar with the information resources available to you

- Contact your local Extension office
- Visit the Southern Region Small Fruit Consortium website (smallfruits.org)
  - Free IPM & production guides available
    - 2022 Southeast Regional Blueberry Integrated Management Guide
    - Southeast Regional Blueberry Horticulture and Growth Regulator Guide
    - Southeast Regional Organic Blueberry Pest Management Guide
- Download the free “MyIPM” mobile app
  - Excellent field resource for diagnostics & quick management recommendations



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Blueberries in Tennessee

- Diseases may not be as significant as with some other fruit crops
- Still several diseases growers should be aware of
  - Mummy berry
  - Phomopsis
  - Botrytis
  - Alternaria
  - Exobasidium

Blueberry – mummy berry

Fungus: *Monilinia vaccinii-corymbosi*

Photo: University of Georgia Plant Pathology
bugwood.org

Photo: Caleb Slemmons
bugwood.org

Blueberry – mummy berry

Fungus: *Monilinia vaccinii-corymbosi*

Symptoms

- Shoot blight (early season)
- Flower cluster blight (early season)
- Mummified fruit (later in season)

Management

- Sanitation – raking mummies to row middle and burying can reduce disease pressure
- Fungicides applied during green tip through bloom are effective
  - Pristine, DMI + captan
  - See production guide for latest fungicide recommendations

  Resistant varieties: none

Blueberry – Phomopsis twig blight

Fungus: *Phomopsis vaccinii*

Symptoms

- Blossom blight
- Fruiting-twig blight
- Reddish brown leaf lesions, white center
- Fruit rot when fruit are ripe or post harvest

Blueberry – Phomopsis twig blight

Fungus: *Phomopsis vaccinii*

Management

- Sanitation – pruning infected twigs in spring (easier for smaller growers)
- Cultivar selection
  - ‘Murphy’ & ‘Bounty’ very susceptible
  - ‘Reveille’, ‘Bluechip’, & ‘Duke’ resistant

- Fungicides applied during budbreak through bloom are effective
  - Several products available
  - See production guide for latest fungicide recommendations

Botrytis

Symptoms

- Favored wet cool wet weather during bloom
- Blossom blight
- Twig blight
- Infected blossoms may be covered in “gray mold”

Management

- Usually well managed with fungicides applied during bloom and fruit ripening
  - Pristine, DMI + captan
  - Fungicides: Switch, Elevate, Captevate, Pristine, Captan, Ziram
  - See production guide for latest fungicide recommendations

Alternaria fruit rot

Symptoms

- Leaf spots, circular/irregular, tan with brown/red border
- Fruit rot develops when fruit ripen
- Post-harvest rot

Management

- Avoid overhead irrigation, prune to promote air flow
- Do not let fruit become overripe
- Harvest when berries are dry
- Cool fruit quickly post-harvest
- Fungicides from early bloom every 14 days until harvest
    - Fungicides: Abound, Switch, Pristine
    - See production guide for latest fungicide recommendations

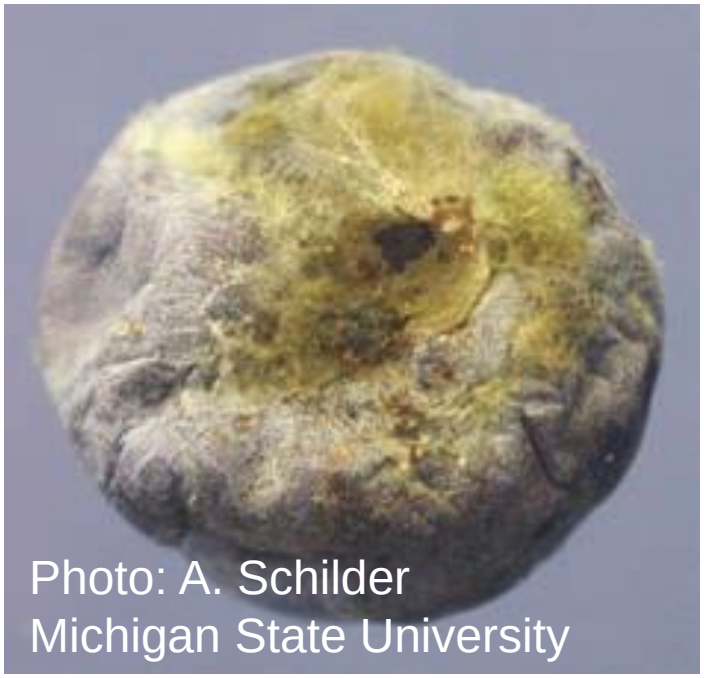
Photo: A. Schilder
Michigan State University

Exobasidium

Photos: Bill Cline
NC State Extension

Symptoms

- Pale green, well defined, circular leaf spots, eventually turning brown
- White fungal growth on leaf underside beneath lesions
- Infected fruit show circular lesions that remain green through ripening
- White fungal growth may be seen on fruit spots

Management

- Avoid overhead irrigation, prune to promote air flow
- Early-season captan sprays
- DMI + captan during bloom
    - See production guide for latest fungicide recommendations

Fungicide cancellation news

- EPA considering cancelling most uses of certain dithiocarbamates (thiram, **ziram [several blueberry diseases]**, ferbam) and iprodione
  - These products important in some specialty crop disease management programs
  - As multi-site fungicides, also important for disease management

Take-aways

- Select disease-resistant varieties when possible
- Select planting sites with good drainage and sunlight
- Keep plants pruned to encourage airflow, rapid drying, fungicide penetration

Take-aways

- If possible, rake and remove or bury mummies to reduce inoculum (mummy berry)
- Prune out and destroy dead twigs and branches
- Most diseases can be well managed with timely fungicide applications
  - FRAC-group rotation and inclusion of multi-site fungicides critical for resistance management
- **Always read the product label**
  - Labels are subject to change, and the target use and method must appear on the label

Take-aways

- Learn to identify common diseases and be prepared to make preventative fungicide applications (MyIPM app helpful for this)

Step #1 in plant problem management = proper diagnosis

www.soillab.tennessee.edu/

Take-aways

- Organic fungicides
  - Make sure product is labeled for intended use
  - Organic products are often biological or plant –extract based and may have limited efficacy
    - Cultural control practices especially important for organic crops
    - Preventative sprays are especially important

Contact Information

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