Fire Blight

- High-density tall/super spindle plantings (1000 – 1200/A) = high-value/vigor acreage
- Young productive trees: protracted bloom & vigorous susceptible shoot tissue
- New popular scion varieties susceptible
- Seasons warmer weather from bloom to terminal bud set
Fire Blight Trials at AgriTech

- Orchard sites (RCB design – wide spacing)
  ‘Gala’ trees on B.9 planted in 2000
Blossom Blight Trials

• Blossom blight application timing
  – Pre-bloom timings for biopesticides (SARs)
  – All antibiotics & biopesticides @ 80% bloom (20-40% bloom)
  – (Ea 273 at $1 \times 10^6 \text{ CFUml}^{-1}) @ 80\% Bloom

• Blossom blight incidence: percentage of blighted blossoms (5-6 reps)
Shoot blight trials

• Shoot blight application timing
  – Natural infection from blossom blight infections
  – Apogee (PF/1-2”) & SARs (Actigard, Lifegard, Regalia)(2-5 days prior)

• Shoot blight: progression of cankers or percentage of blighted shoots/tree
Trials at AgriTech – Biologicals 2019

Blossom Blight

- Mean percentage of blighted blossom clusters

- Comparison of treatments:
  - UTC
  - FireWall 17WP 24 oz
  - Alum 8 lbs/100 gal
  - Blossom Protect
  - Serenade Opti 20 oz
  - Actigard 2 oz
  - Double Nickel LC 1 qt + Cueva 2 qt
  - Stargus 64 fl oz + Regulaid 48 fl oz
  - Agriphage 1 qts x 3 & 2 qts x 1

- Treatment effectiveness shown with letter codes (a, bcd, de, etc.)

Shoot Blight

- Mean percentage of shoots with fire blight

- Comparison of treatments:
  - UTC
  - FireWall 17WP 24 oz
  - Alum 8 lbs/100 gal
  - Blossom Protect
  - Serenade Opti 20 oz
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  - Agriphage 1 qts x 3 & 2 qts x 1

- Treatment effectiveness shown with letter codes (a, cd, bcd, etc.)

Key:
- Blossom protect
- Serenade + Actigard
Trials at AgriTech – Biologicals 2020

Blossom Blight

Mean percentage of blighted blossom clusters

- UTC
- FireWall 17WP 24 oz
- Alum 8 lbs/100 gal + Buffer protect
- Serenade Opti 20 oz
- Employ 2 oz
- Cueva 2 qt
- Cinnerate 32 fl oz x 3 & 2 qts x 1

Mean percentage of shoots with fire blight

- UTC
- FireWall 17WP 24 oz
- Alum 8 lbs/100 gal + Buffer protect
- Serenade Opti 20 oz
- Employ 2 oz
- Cueva 2 qt
- Cinnerate 32 fl oz x 3 & 2 qts x 1
Trials at AgriTech – Biologicals 2021

**Blossom Blight**
- Blossom protect
- Howler & Thiea

**Shoot Blight**
Trials at AgriTech – Biologicals 2022

Blossom Blight

- Hot, Wet Season
- Blossom protect
- Alum (pickling salt)

Blossom Populations

- Alum, Oxidate, & Thyme Gard
- Blossom Protect
Trials at AgriTech – Biologicals 2022

**Blossom Blight**

- Hot, Wet Year
- Blossom protect
- Alum (pickling salt)

**Shoot Blight**

[Graph showing mean incidence of blossom and shoot blight across different treatments]
Trials at AgriTech – SARS 2019

**Blossom Blight**

Mean percentage of blighted blossom clusters

- **UTC**: a
- **FireWall 17WP 24 oz**: de
- **LifeGard-13.5 oz**: b
- **Regalia 16 fl oz + Cueva 2 QT**: bcde
- **Regalia 48 fl oz + Regulaid 48 fl oz + Apogee 2 oz/100**: bcde

**Shoot Blight**

Mean percentage of shoots with fire blight

- **UTC**: a
- **FireWall 17WP 24 oz**: cd
- **LifeGard-13.5 oz**: bcd
- **Regalia 16 fl oz + Cueva 2 QT**: bcd
- **Regalia 48 fl oz + Regulaid 48 fl oz + Apogee 2 oz/100**: bcd

Regalia & Apogee?
Trials at AgriTech – SARS 2020

Blossom Blight

LifeGard on BB?

Mean percentage of blighted blossom clusters

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Mean percentage</th>
</tr>
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<tbody>
<tr>
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Mean percentage of shoots with fire blight

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Trials at AgriTech – SARS 2021

**Blossom Blight**

- LifeGard on BB?
- Actigard variability?

**Shoot Blight**
Trials at AgriTech – Select 2022

Blossom Blight
- Hot, Wet, Season
- Cinnaction & Curezin

Shoot Blight
- Thiea, Cinnaction, Curezin?
Biologicals and SARS Takeaways

• Biologicals
  – Blossom Protect effective – never seen russetting (don’t tank mix with fungicides)
  – Howler & Theia look promising
  – Alum (similar in MI, NC, WA, and OR in 2022)

• SARS
  – Similar performance from LifeGard & Regalia
  – Some variability with ASM (Actigard) in 2021, but better in combo with Apogee
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