



European Brown Rot

Fungicide Efficacy Trials, 2008-09

Erin Lizotte, NWMHRS

Dr. Nikki Rothwell & Karen Powers, NWMHRS

Dr. George Sundin and Gail Ehret, MSU Dept of Plant Pathology

- European brown rot is caused by *Monilinia laxa*
 - Infects tart cherry, specifically Balaton
 - Most common sweet cherry cultivars and Montmorency tart cherry are reasonably resistant





- *M. laxa* damages blossoms and spurs
- A wetting period of 24 hours + can cause blossom blight
- Able to grow at 35°F
- Newly infected blossoms turn brown and the fungus sporulates on infected tissue
- Low temperatures enhance conidial production
- Conidial germination occurs more readily in free water
- Systemic infection of the spurs follows

- The systemic infection causes the formation of cankers at the base of the spur (bark removal may be necessary to see canker)
- The cankers, as well as blossom debris and dead spurs, produce conidia during subsequent seasons



Photo by Al Jones

Primary Objective

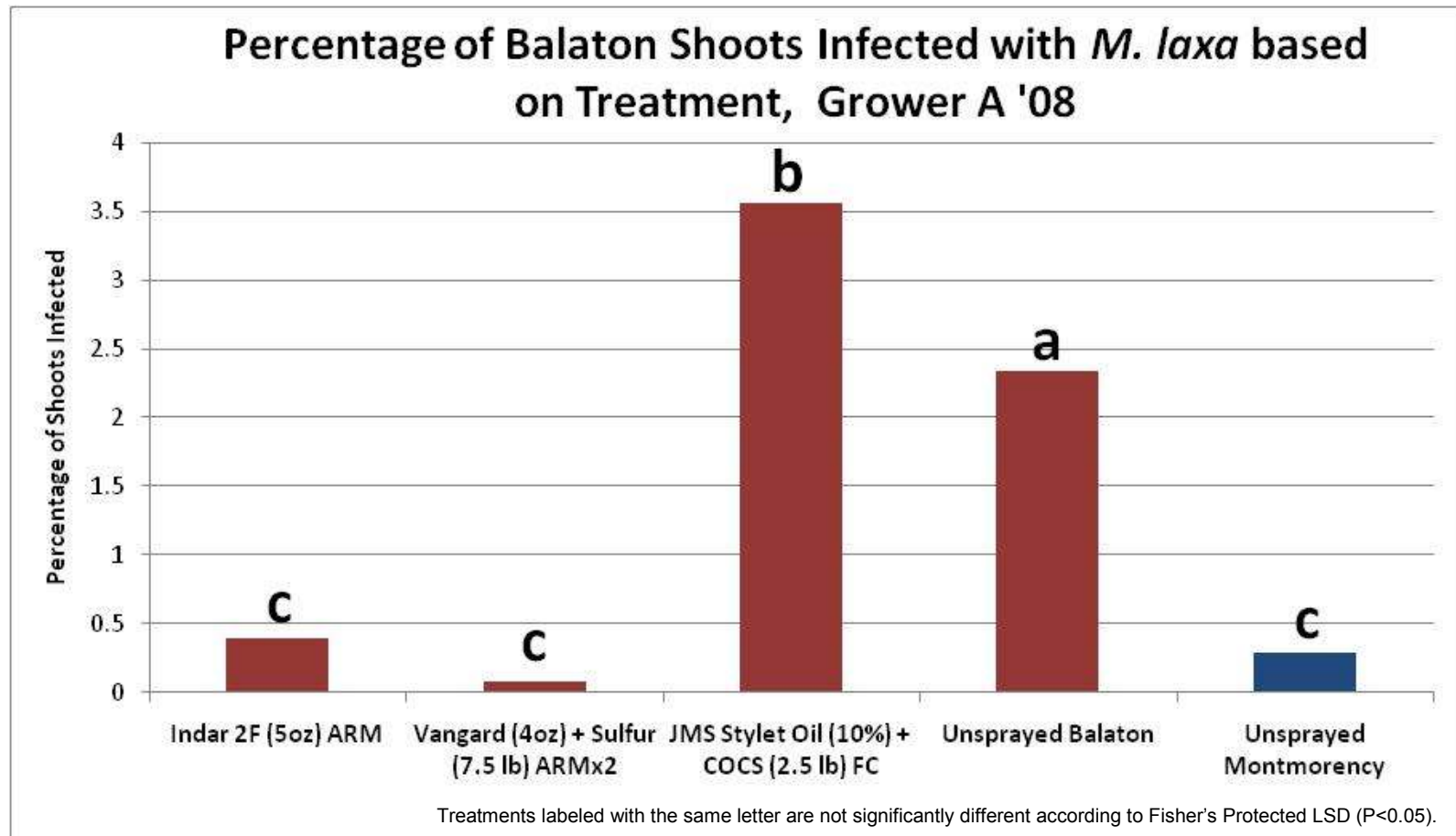
- ❖ Determine if JMS Stylet Oil, sulfur or copper can be utilized to control EBR in organic and conventional production systems
 - ❖ Determine if Vangard can be utilized to control EBR



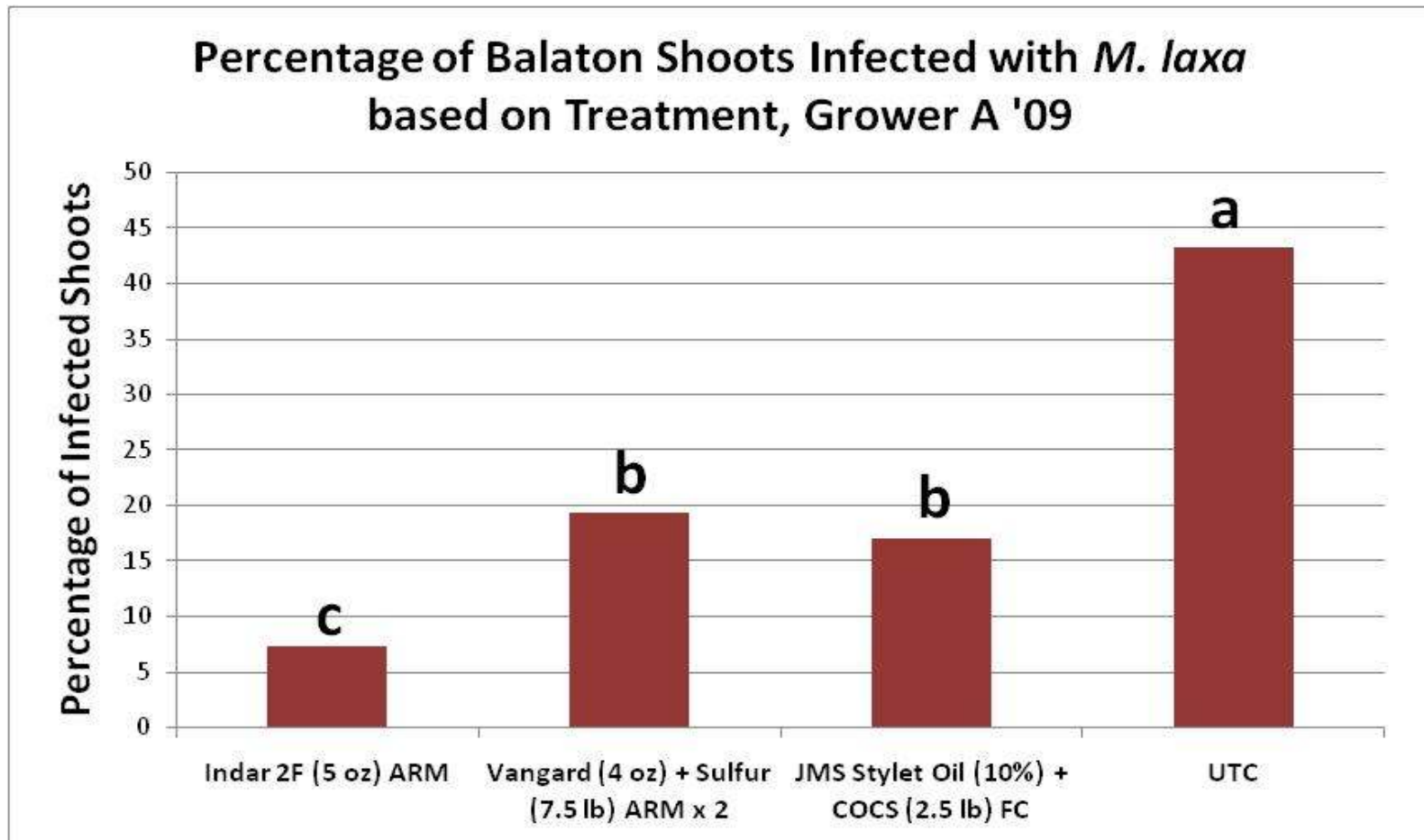
Methods

- Tested treatments with grower cooperator “A” and at the NWMHRS
- 5-35 tree replicates were treated with the materials under evaluation
- All sites included an UTC as well as Indar, the industry standard
- 200 shoots per tree (50/quadrant) were evaluated for EBR infection
- Application timing and method varied based on material





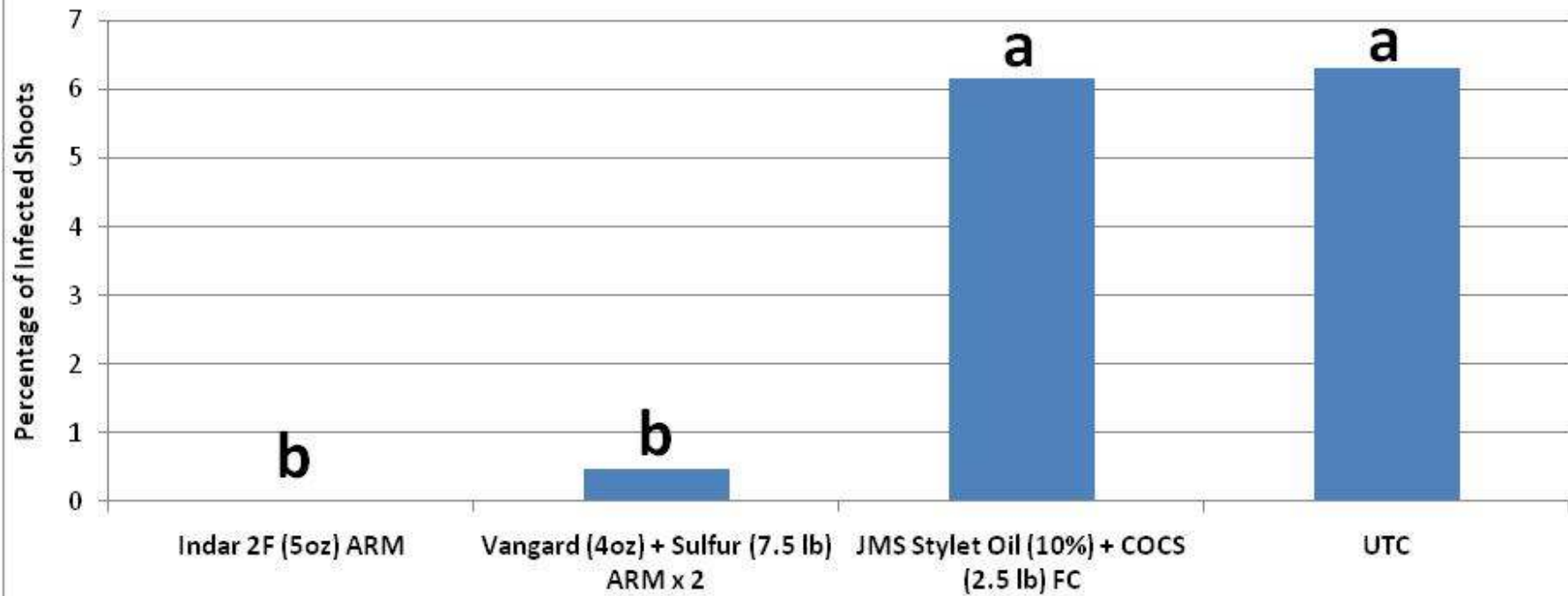
- Disease pressure was low in 2008
- Indar was applied once during bloom, ARM
- ARM Vanguard/sulfur treatments were applied twice during bloom
- A full cover of JMS Stylet Oil and Cu were applied prebloom
- Under these low pressure conditions Vanguard + Sulfur performed as well as Indar and in comparison to the UTC



Treatments labeled with the same letter are not significantly different according to Fisher's Protected LSD (P<0.05).

- EBR pressure was intense in 2009!
- Methods of application were similar to 2008, except JMS Stylet Oil and COCS were applied during bloom (Approx 50%)
- Vanguard and JMS Stylet Oil/COCS significantly reduced EBR incidence but Indar was the most effective

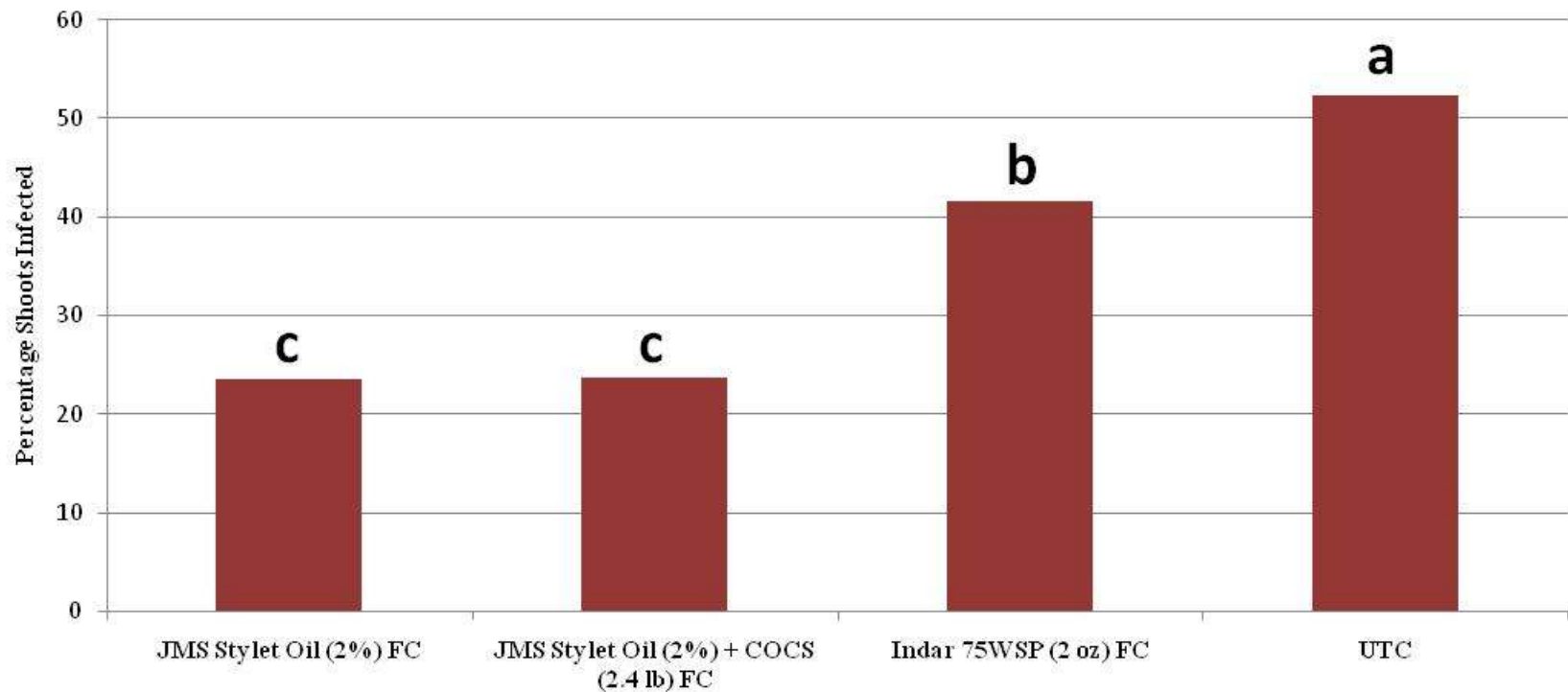
Percentage of Montmorency Shoots Infected with *M. laxa* based on Treatment, Grower A '09



Treatments labeled with the same letter are not significantly different according to Fisher's Protected LSD ($P < 0.05$).

- Significantly less disease in the Montmorency
- Indar and Vanguard/Sulfur significantly reduced disease
- JMS Stylet Oil/COCS did not significantly reduce disease

Percentage of Balaton Shoots Infected with *M. laxa* based on Treatment, NWMHRS '09



Treatments labeled with the same letter are not significantly different according to Fisher's Protected LSD ($P < 0.05$).

- High pressure in 2009
- Applications were made at bud burst and white bud
- JMS Stylet Oil performed similarly to the trial Grower A's , reducing disease by ~50%, Copper doesn't appear to contribute
- Indar did not perform as well but was not applied at the traditional timing (a little too early with no true bloom spray)

Conclusions

- Indar is still highly effective against EBR if applied at the proper timing (white bud and bloom)
- JMS Stylet Oil can significantly suppress infection and is the only OMRI approved option currently available
- Copper does not appear to affect the efficacy of JMS stylet oil against EBR
- Vanguard significantly suppressed infection and shows potential under low pressure
- Further testing of rates, application timing, and efficacy is warranted with JMS Stylet Oil

Thanks
Dr. Rothwell and Dr. Sundin
Gail Ehret and Karen Powers

GROWER A!

