Cranberry Station Extension meetings

Spring 6-8-2020

2020 Bogside June 8: Fruit Rot and Final Keeping Quality Forecast

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Optimizing Fruit Rot Management

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UMass Cranberry Station
June 8th, 2020
Fruit Rot

- Field rot fungi are reported to infect early in the growing season during bloom and remain latent until fruit begin to ripen.
Factors affecting cranberry fruit rot incidence & management

Plant factors
- Canopy density
- Air circulation
- Vine health
- Level of resistance

Fruit Rot Inoculum
- Fungal pathogen density
- Trash piles

Cultural/Management practices
- Late water use
- Judicious and well-timed use of fungicides
- Fungicide coverage
- Fertilizer rates
- Harvest practices
Integrated Disease Management of Cranberry Diseases

- Reducing inoculum levels
- Canopy management
- Late Water
- Resistant Varieties

Using beneficial microbes & OMRI approved products

Cultural Control

Biological Control

Chemical Control

Cranberry IDM

Fungicides
Success of a chemical control program depends on
- Choice of fungicide options
- Application Timings
- Number of fungicide applications
- Resistance management
Chemical Control

Fungicides

Choice of fungicide options - Efficacy
Availability
Phytotoxicity
Handler restrictions

Group 11
Abound

Group 3
Indar
Proline

Group 3 & 11
Quadris Top

Group M5
Group M3
Group M1
Group 19

Azoxystrobin

Azoxystrobin & Difenconazole

Fenbuconazole
Prothioconazole

Cholorothalonils
Mancozebs
Coppers
Polyoxin- D-Zinc Salt
If you chose to use chlorothalonil after discussing with your Handlers....

- Apply during **EARLY-MID BLOOM (10-50% bloom)**.
- Do not use a spreader sticker (adjuvant) with chlorothalonils.
- Limit to a **maximum of 3 applications per season**.
- If a Bravo application was used for upright dieback control, only 2 applications are allowed for fruit rot.
- **12 hour Reentry Interval (REI)**.
- Hold water for 3 days after each application.
- **50 day pre-harvest interval (PHI)**.
If you chose to use Mancozebs after discussing with your Handlers....

Timing- Early to Mid Bloom

- Addition of spray adjuvants will improve distribution and deposition for mancozeb compounds.
- 30 day PHI.
- 24-hr to 48-hr REI.
Group 3
Timing - Early to Mid-bloom

Indar 2F @ 6-12 fl oz/acre
- Fenbuconazole fungicide
- No more than 2 applications due to resistance concerns.
- Do not use prior to bloom.
- 30-day pre-harvest interval (PHI).
Group 3
Timing - Early to Mid-bloom

Proline 480SC @ 5 fl oz/acre
- **Prothioconazole** fungicide
- No more than 2 applications.
- 45-days pre-harvest interval (PHI).
Group 11
Timing- Early to Mid-bloom

Abound @ 6-15.5 fl oz/acre

- Azoxystrobin fungicide.
- No more than 2 sequential applications due to resistance concerns.
- Hold water for 14 days.
Group 3 & 11
Timing- Early to Mid-bloom

Quadris Top® - 10-14 fl oz/acre

- Combination of azoxystrobin and difenoconazole.
- 30-days pre-harvest interval (PHI).
- 12-hour Reentry Interval (REI).
- Apply on a 7-14 day interval.
- No more than 2 sequential applications before alternating to a fungicide with different mode of action.
<table>
<thead>
<tr>
<th>Compound</th>
<th>Cost/A</th>
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<tbody>
<tr>
<td>Bravo WS</td>
<td>$35.89</td>
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<td>Proline</td>
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<td>Indar</td>
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<td>QuadrisTop</td>
<td>$33-$35</td>
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<td>Manzate Max</td>
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FRAC Group 19
Timing – Early to Mid Bloom

• Polyoxin-D Zinc Salt – Oso, Ph-D.
• No more than 6 applications of Oso or 3 applications of Ph-D when using maximum rate.
• Limited Research on efficacy.
• For best results, alternate or incorporate into a program with other fungicides for fruit rot.
Group M1
Mid – Late Bloom (>50%)

Copper Fungicides

Examples: MasterCop and Kocide

- Do not mix copper fungicides with insecticides.
- Do not tank mix with Aliette or phosphites unless spray solution has been buffered first.
Well-timed applications are key..

- Bloom & Early fruit set are susceptible.
- Monitor bloom on a regular basis and plan fungicide applications effectively.
- Avoid sprays when pollinators are working whenever possible.
Keeping Quality Forecast

- Issued since 1949
- **Preliminary KQF** – early April; timed for the decision of whether to hold late water
- **Final KQF** – early June; timed for the determination of fungicide applications and rates.
Cranberry Keeping Quality Forecast Point System
(Franklin and Cross. 1948)

- Total Sunshine Hours from Previous Year
- Total Sunshine Hours for the months of February and March in comparison with the past 50-year average
- Total precipitation for the months of March, April and May in comparison to the average of East Wareham and Middleboro for the present year
- Average temperature for March, April and May in comparison to threshold temperatures
1. If the total of sunshine hours from previous year is less than the 50-year average of 2,274 hours. 4 points

2. If the total of sunshine hours for February for the present year is less than the 50-year average for that month (143 hr). 1 point

3. If the total of sunshine hours for March for the present year is more than the 50-year average for that month (179 hr). 2 points

4. If the total precipitation for March for the present year is less than the average of East Wareham and Middleboro mean of 4.39 inches. 1 point

5. If the average temperature for March of the present year at Middleboro is below the March threshold of 34°F. 2 points
6. If the average temperature for April for the present year at Middleboro is below the April threshold of 44°F. 2 points
7. If the total precipitation for April for the present year is less than the average of East Wareham and Middleboro (6.70 inches). 1 point
8. If the average temperature for May for the present year at Middleboro is below the May threshold of 52°F. 2 points
9. If the total precipitation for May for the present year is less than the average of East Wareham and Middleboro (3.20 inches). 1 point
Final Keeping Quality (out of 16)

- 0 – 2 points = Very poor
- 3 – 4 points = Poor
- 5 – 6 points = Fair
- 7 – 8 points = Good
- 9 – 10 points = Very good
- 11 + points = Excellent
Forecast for 2020 Keeping Quality

The final keeping quality forecast for 2020 is GOOD

7/16 points

Peter Jeranyama and Leela Uppala
**Number of fungicide applications**

- **High**: 4 to 5 applications
  - High prior fruit rot incidence.
  - Susceptible Varieties.
  - Newly established beds.

- **Moderate**: 3 applications
  - Moderate fruit rot incidence.
  - Resistant varieties.

- **Low**: 0 to 2 applications
  - Low fruit rot incidence.
  - Resistant varieties.
How to preserve the effectiveness and durability of registered fungicides

• Repeated and infective use leads to resistance.
• Follow all label instructions.
• Alternate or mix fungicides with different modes of action.
### Why failures in fruit rot control

- Improperly timed applications
- Application variability
- Wash off
- Canopy density
For Effective Chemical Control….

- Choose the **right fungicide**
- **Do not use a fungicide at** less than the registered rate
- **Aim for** uniform coverage
- **Apply at** the right time
- **Apply materials with low phytotoxicity during fruitset**

- Always read the label and communicate with handlers for making fungicide decisions.
Stay Safe
Wishing you a great cranberry season ahead…..

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