Spring 5-20-2020

2020 Bogside May 20: Fungi - Upright Dieback Not Too Late, Fruit Rot Options?

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Cranberry Disease Management Guidelines

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UMass Cranberry Station
May 20th, 2020
Upright Dieback

Phomopsis vaccinii

Fusicoccum putrefaciens

Synchronoblastia crypta
Avoid heat stress. Prolonged periods of drought worsens the damage caused by this disease.

Coppers and Chlorothalonil fungicides are registered.

eg: Champ DP, Champ Flowable, Champ WG

   Bravo Ultrex, Bravo Weather Stik, Equus DF

Timing of applications:

   Early applications at bud break and/or bud elongation are known to provide excellent control.
### DISEASE - UPRIGHT DIEBACK

**TIMING - April 25 through May 15**

<table>
<thead>
<tr>
<th>PESTICIDE/FORMULATION</th>
<th>RATE (amt/A)</th>
<th>COMMENTS/RESTRICTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Champ DP Dry Prill</td>
<td>5.3 lb</td>
<td>Must be applied pre-bloom. 48-hour restricted entry interval.</td>
</tr>
<tr>
<td>Champ Formula 2 Flowable</td>
<td>5.33 pt</td>
<td></td>
</tr>
<tr>
<td>Champ WG</td>
<td>4.2 lb</td>
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#### CHLOROTHALONIL FORMULATIONS

<table>
<thead>
<tr>
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<th>COMMENTS/RESTRICTIONS</th>
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<tbody>
<tr>
<td>Bravo Ultrex, Echo DF</td>
<td>3.8 – 6 lb</td>
<td>One pre-bloom application should be applied after the terminal bud has broken dormancy (begun to swell or has begun new growth). Exact timing will depend on whether the variety is early or late-season. 12-hour restricted entry interval.</td>
</tr>
<tr>
<td>Bravo Weather Stik</td>
<td>4 – 6.5 pt</td>
<td></td>
</tr>
<tr>
<td>Chlorothalonil 720 SC</td>
<td>4 – 6.5 pt</td>
<td></td>
</tr>
<tr>
<td>Chloronil 720, Equus 720 SST</td>
<td>4 – 6.5 pt</td>
<td></td>
</tr>
<tr>
<td>Echo 720</td>
<td>4 - 7 pt</td>
<td></td>
</tr>
<tr>
<td>Echo 90DF</td>
<td>3.25 - 5.75 lb</td>
<td></td>
</tr>
<tr>
<td>Equus 500 ZN, Initiate ZN</td>
<td>5.75 – 9.25 pt</td>
<td></td>
</tr>
</tbody>
</table>

For all above chlorothalonil formulations: Hold water for 3 days after application. When chlorothalonil formulations are to be used in a bed subject to Zone II regulations, growers must follow the required process to determine if these products may be used. See Zone II section. The maximum allowable number of chlorothalonil applications is 3. **If a chlorothalonil application is used for upright dieback control, only 2 fruit rot applications are allowed.**
Cranberry Bud Stages

Cabbage head

PC: Martha Sylvia and Peter Jeranyama
Cranberry Bud Stages

Bud Elongation: Between cabbage head and roughneck

PC: Martha Sylvia and Peter Jeranyama
Examples of Bud Elongation

PC: OceanSpray
Cranberry Bud Stages

Roughneck Stage

PC: Peter Jeranyama
Upright Dieback

• Spores of the primary causal agent Phomopsis begin to be produced from overwintering cranberry tissue in April and May, the emerging buds are particularly susceptible to the infection.
• There are *three phases* during the season when the symptoms appear:
  
  shortly after the withdrawal of winter flood
  June and early July
  Late August and September
Upright Dieback

• Fungicides targeted for fruit rot control also provide a degree of protection against this disease during early and mid-season infection periods.
Fruit Rot

Field Rot

- Botryosphaeria vaccinii
- Botrytis spp.
- Allantophomopsis cystisporea
- Allantophomopsis lycopodina
- Coleophoma empetri
- Colletotrichum acutatum
- Colletotrichum gloeosporioides
- Fusicoccum putrefaciens
- Phomopsis vaccinii
- Phylosticta vaccinii
- Physalospora vaccinii
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.
Preliminary Forecast for 2020
Keeping Quality

The preliminary forecast for 2020 is for FAIR keeping quality
Chemical Control

Fungicides

- Choice of fungicide options
  - Efficacy
  - Availability
  - Phytotoxicity

Group 11
- Abound

Group 3
- Indar
- Proline

Group 3 & 11
- Quadris Top

Group M5
- Group M3
- Group M1
- Group 19

Chlorothalonils
- Mancozebs
- Coppers
- Polyoxin- D-Zinc Salt

Azoxystrobin

Azoxystrobin & Difenconazole
Mancozeb Status

- The European Union notified the WTO of its proposal not to renew the approval for use of mancozeb (Manzate) in the European Union.

- The current proposal is open for comments at the WTO until June 15th. A final publication is expected no earlier than July 2020.

- Once a final decision is published, European users will have three months for use of available stocks, with a maximum grace period of six months.
# Fruit Rot Fungicide Efficacy

<table>
<thead>
<tr>
<th>Fungicide</th>
<th>Trade Names</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorothalonil</td>
<td>Bravo, Echo, Equis, etc.</td>
<td>Check with handler for market restrictions.</td>
</tr>
<tr>
<td>Mancozeb</td>
<td>Dithane, Manzate, Penncozeb, etc.</td>
<td>May delay fruit color. Efficacy comparable to chlorothalonil. Low risk of resistance. Should be used as a resistance management tool if using ‘newer’ fungicides (see resistance management section). Restricted by some handlers.</td>
</tr>
<tr>
<td>Prothioconazole</td>
<td>Proline</td>
<td>Moderate risk of resistance. No more than 2 applications recommended. For best results and resistance management, use during bloom and combine with azoxystrobin.</td>
</tr>
<tr>
<td>Fenbuconazole</td>
<td>Indar</td>
<td></td>
</tr>
<tr>
<td>Azoxystrobin</td>
<td>Abound, Satori</td>
<td>High risk of resistance. No more than 2 applications. For best results combine with prothioconazole or fenbuconazole.</td>
</tr>
<tr>
<td>Polyoxin-D zinc salt</td>
<td>Oso and Ph-D</td>
<td>Moderate risk of resistance. Maximum of 3 Oso applications or 6 Ph-D applications. Limited research on efficacy of polyoxin-D fungicides in MA. For best results alternate or incorporate into a program with other fungicides for fruit rot.</td>
</tr>
<tr>
<td>Ferbam, Coppers, SDHI, plant extracts</td>
<td>Champ, Kocide, Kenja, Regalia, etc.</td>
<td>Limited research on efficacy of Kenja and Regalia in MA. These products were not effective against rot in 2016 trials. It is possible that better results could be obtained if alternated with other fungicide products with higher efficacy ratings.</td>
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</tbody>
</table>
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