2020 Vision: New Fungicide Recommendations for Stemphylium Leaf Blight in Onion

Christy Hoepting, CCE Cornell Vegetable Program

New Fungicide Suggestions and Things to Consider for Stemphylium Leaf Blight in Onion in 2020

Christy Hoepting, CCE Cornell Vegetable Program


2020 Onion SLB Fungicide Roster

<table>
<thead>
<tr>
<th>Trade Name</th>
<th>Active Ingredient</th>
<th>FRAC Code</th>
<th>Fungicide Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rowra</td>
<td>iodone</td>
<td>2</td>
<td>Some Slip resistant</td>
</tr>
<tr>
<td>Scala</td>
<td>pyrimethanil</td>
<td>9 a</td>
<td>Some resistant</td>
</tr>
<tr>
<td>Tilt</td>
<td>propiconazole</td>
<td>5 a</td>
<td>Some resistant</td>
</tr>
<tr>
<td>Quadris Top</td>
<td>dimethomquate</td>
<td>3 b</td>
<td>Some resistant</td>
</tr>
<tr>
<td>Inspire Super</td>
<td>dimethomquate</td>
<td>3 b</td>
<td>Some resistant</td>
</tr>
<tr>
<td>Violation</td>
<td>tebuconazole Phosphorus acid</td>
<td>3 c</td>
<td>None</td>
</tr>
<tr>
<td>Luna Tranquility</td>
<td>fluopyram pyridimethanil</td>
<td>7(1) 9 a</td>
<td>Slipping Some Some Slipping Slipping</td>
</tr>
<tr>
<td>Merivon</td>
<td>fluxapyrom pyraclostrobin</td>
<td>7(2) 11</td>
<td>Resistant Slipping Some Resistant Slipping</td>
</tr>
<tr>
<td>Endura</td>
<td>boscalid</td>
<td>7(3)</td>
<td>Slipping</td>
</tr>
<tr>
<td>Luna Experience</td>
<td>fluopyram tebuconazole</td>
<td>7(1) 3 c</td>
<td>Some?</td>
</tr>
<tr>
<td>Miravis Prime</td>
<td>pyridimethanil fubroconil</td>
<td>7(4) 12</td>
<td>Some? Some?</td>
</tr>
</tbody>
</table>

- **Resistant**: Failed in field trial, >65% insensitive isolates detected
- **Slipping**: Field performance declined, insensitive isolates detected
- **Some**: Some moderately insensitive isolates detected
- **None**: Only sensitive isolates detected

Coming soon!
2020 SLB Fungicide Suggestions

• Start spraying earlier – 4-leaf(?) in June vs. 0.5-1” bulb in July
  • Fungicides are not as effective, no more “big guns”
  • Easier to keep very low population in check with less effective products

2017

2018

● Stemphylium detected ○ Stemphylium not detected

2020 SLB Fungicide Suggestions

• Do not stretch SLB fungicide program – spray every 7 days
  • To prevent SLB from recovering between sprays
• Use two FRAC groups with activity on SLB in every spray
• No more than two apps per FRAC before rotating to another FRAC
• Rotate active ingredients and sub-classes within each FRAC group
  • Each have slightly different mode of action
• Use high rates of FRAC 3
  • Low resistance factor, increased rates go a long way
  • FRAC 3 + 3 okay, but should still be used with another SLB FRAC
• Increase rate of Luna Tranquility?
  • Depends on what resistance factor is.
2020 SLB Fungicide Suggestions

- Do not use Merivon in Elba or Oswego
  - Use at your own risk in other regions
- Do not use Scala
  - EXCEPT in Elba
- Do not use Rovral in Oswego or Orange
  - Wayne?
  - Rovral may be used in Elba?
- End spray program at 50% lodging or later?

2020 Sample Spray Program – SLB Only

<table>
<thead>
<tr>
<th>Week</th>
<th>Fungicide and Rate/A</th>
<th>FRAC Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td>Quadris Top 14 fl oz</td>
<td>3b, 11, 3a</td>
</tr>
<tr>
<td></td>
<td>+ Tilt 8 fl oz</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Viathon 3 pt</td>
<td>3c, P06, 2</td>
</tr>
<tr>
<td></td>
<td>+ Rovral 1 pt</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Luna Tranquility 16-20 fl oz</td>
<td>7(1), 9a</td>
</tr>
<tr>
<td>4</td>
<td>Inspire Super 20 fl oz</td>
<td>3b, 9b</td>
</tr>
<tr>
<td>5</td>
<td>Miravis Prime 11.4 fl oz</td>
<td>7(4), 12, 2</td>
</tr>
<tr>
<td></td>
<td>+ Rovral 1 pt</td>
<td></td>
</tr>
<tr>
<td>6-10</td>
<td>Repeat 1-5</td>
<td></td>
</tr>
</tbody>
</table>

Program uses 8 active ingredients.

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>3a</th>
<th>3b</th>
<th>3c</th>
<th>7 (1)</th>
<th>7 (4)</th>
<th>9a</th>
<th>9b</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 weeks</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>10 weeks</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Not a Recommendation – 3rd attempt at putting together a program
*This treatment would be better plus another FRAC group (but which one?)
Stay Tuned!!

- Results from one more fungicide to analyze
  - Emphasis on starting fungicide program early
  - May find some success with Biologicals – FRAC 44 and P06 when applied preventatively
- Frank Hay has more SLB isolates to screen
  - 2019 isoltes
  - Screen FRAC 3
- Botrytis leaf blight results
  - Field performance
  - Screening for fungicide sensitivity?
- New Cornell Fungicide Cheat Sheet and Recommendations for 2020 when we know more!

Available at CCE CVP website: [http://cvp.cce.cornell.edu/](http://cvp.cce.cornell.edu/)

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Future Research

**On-farm fungicide trials:**
- Revisit FRAC 20
  - Omega in 2015 was statistically as good as Tilt, maybe something we can use
- Inspire Super 20 fl oz + Tilt 8 fl oz
- Efficacy of increased rates of Luna Tranquility, Scala + Rovral
- Extended fungicide program after lodging
- Continue to work with Katrin on studying how different programs influence SLB fungicide resistance
- Other?

**In collaboration with Frank Hay:**
- Continue to monitor SLB isolates for fungicide resistance
- Develop molecular and DNA techniques for rapid detection of fungicide resistance
- Develop and validate SLB prediction model
- Explore varietal differences?
Questions