Results of 2015 Trials on Wireworm Control

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2015 Wireworm Trials

1. Insecticide Efficacy Trial
2. Crop Rotation x Insecticide – 2 locations
3. Mustard Variety Trials- 2 locations
Field Selection -

• Confirmed the presence of wireworm by installing carrot baits in the field

• Field used for all trials are “wireworm-infested fields”
Observations

• High incidence observed in terms of # of holes & # of wireworm (some neonates, too)

• Visually, it is difficult to correlate the spring wireworm incidence and damage severity (in baits) with the wireworm damage (in potatoes) in the fall
Wireworm Damage Assessment in all trials
Early season holes/scars
Late season holes
2015 Wireworm Trials

• Insecticide Efficacy Trial
• Crop Rotation x Insecticide – 2 locations
• Mustard Variety Trials- 2 locations
Insecticide Trial for Wireworm Control – New Annan

TREATMENTS:

1. Untreated Check
2. Thimet
3. Capture in furrow
4. Capture in furrow + Capture layby
5. Capture in furrow + Titan seed treatment
6. Capture in furrow + Titan seed treatment + Capture layby

Results - Presented by Mark McMillan of FMC
2015 Wireworm Trials

• Insecticide Efficacy Trial
• Crop Rotation x Insecticide – 2 locations
• Mustard Variety Trials- 2 locations
Field History

- 2012 – potatoes
- 2013 – barley (wireworm-damaged)
- 2014 – crop rotation
- 2015 – potatoes
Cropping System x Insecticide (2015)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Color</th>
<th>Rotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Barley (control)</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Mustard 199 inc + Mustard 199 inc</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Mustard 199 inc + Buckwheat inc</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Buckwheat inc + Buckwheat inc</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Buckwheat inc + Mustard 199 inc</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Spring fallow, harrow twice in July + Mustard 199 inc</td>
</tr>
</tbody>
</table>
2014 Crop Rotation Trial
Cropping Systems

- Each rotation strip 26ft wide.
- 75lbs of "N" and 12.5lbs of "S" per acre was applied pre-plant broadcast.
- Seeding rate of Mustard ≈ 10lbs/ac
- Seeding rate of Buckwheat ≈ 40lbs/ac
- Seeding rate of Barley ≈ 100lbs/ac
2015 Wireworm trials planted over the cropping system strips trial

- Located on Locke Shore Rd., Summerside

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Thimet</td>
<td>Mocap 15G</td>
<td>Capture Alone</td>
<td>Capture in Furrow + Layby</td>
</tr>
</tbody>
</table>

450 ft. long

6 rows per treatment
## 2015 trials

<table>
<thead>
<tr>
<th>Main Plot - Crop Rotation</th>
<th>Early season Hole #</th>
<th>Late season Hole #</th>
<th>Total Holes #</th>
<th>Average Holes/Tuber #</th>
<th>Total Tubers Evaluated #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley</td>
<td>216.5</td>
<td>315.9</td>
<td>532.3</td>
<td>2.8</td>
<td>190.8</td>
</tr>
<tr>
<td>Buckwheat + Buckwheat</td>
<td>161.7</td>
<td>236.7</td>
<td>398.5</td>
<td>2.2</td>
<td>185.3</td>
</tr>
<tr>
<td>Buckwheat + Mustard 199</td>
<td>113.2</td>
<td>162.1</td>
<td>275.3</td>
<td>1.5</td>
<td>188.8</td>
</tr>
<tr>
<td>Mustard 199 + Mustard 199</td>
<td>136.3</td>
<td>171.7</td>
<td>308.1</td>
<td>1.6</td>
<td>192.0</td>
</tr>
<tr>
<td>Mustard 199 + Buckwheat</td>
<td>121.0</td>
<td>208.1</td>
<td>329.1</td>
<td>1.8</td>
<td>186.3</td>
</tr>
</tbody>
</table>
MORE results of insecticide x crop rotations will be discussed on April 13 during the Cavendish Farms Spring Research Forum
2015 Wireworm Trials

• Insecticide Efficacy Trial
• Crop Rotation x Insecticide – 2 locations

• Mustard Variety Trials- 2 locations
I. Mustard Variety Trial (small plots)

- Plots are 25ft in length and 10ft in width (2 reps)
- 6 varieties

II. Mustard Variety Trial (commercial field)

- ~ 6 acres per variety
- 5 varieties

**Objectives**: To evaluate the growth & adaptation of the different varieties under PEI conditions
Mustard Varieties

Caliente™ 199/ Nemat - “Arugula-mustard mix”
    (Brassica juncea + Sinapsis alba) + (Eruca sativa)
Caliente 199 - “mustard mix”
    (Brassica juncea + Sinapsis alba)
Cutlass “yellow mustard” -
    (Brassica juncea)
Braco “white mustard” -
    (Sinapsis alba)
Centennial “common brown mustard”
    (Brassica juncea)
Pacific Gold “yellow Mighty Mustard™” – only in small research plots
    (Brassica juncea)
# PEI Mustard SEED Samples

## Glucosinolate Analysis

<table>
<thead>
<tr>
<th>Mustard / Variety</th>
<th>allyl</th>
<th>mtb*</th>
<th>Total glucs</th>
<th>unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centennial (Local Variety)</td>
<td>92.02</td>
<td>0</td>
<td>96.49</td>
<td>um/g</td>
</tr>
<tr>
<td>Caliente 199-Nemat</td>
<td>56.85</td>
<td>46.74</td>
<td>108.39</td>
<td>um/g</td>
</tr>
<tr>
<td>Caliente 199</td>
<td>97.51</td>
<td>0</td>
<td>103.94</td>
<td>um/g</td>
</tr>
</tbody>
</table>

*methylthiobutylglucosinolate*
Results of mustard variety trials will be discussed on April 13 during the Cavendish Farms Spring Research Forum.
Thank You!