Entomology Appendix A.: Agronomic, Rainfall, and Plot Maintenance Information

Location: St. Thomas (Pembina County), ND – Wayne Lessard Farm – Sugarbeet Root Maggot Trials

Plot size: Six 35-ft long rows, 4 center rows treated

Design: Randomized complete block, 4 replications

Soil name: Glyndon silt loam

Soil test: Organic matter = 3.1%  pH = 7.8

Soil texture: 25.2% sand  53.3% silt  21.6% clay

Previous crop: Potatoes (2016)

Soil preparation: Field cultivator (1x)

Planting depth: 1.25"

Herbicides applied: June 12 Roundup PowerMAX (32 fl oz/ac) + Veracity (3 qt/100 gal)
June 29 Roundup PowerMAX (22 fl oz/ac) + Veracity (3 qt/100 gal) + Outlook (18 fl oz/ac)

Rainfall (after seedbed preparation):
- May 16 0.15"
- May 20 0.15"
- May 21 0.38"
- May 22 0.08"
- May 27 0.17"
- May 29 0.03"
- Total/May 0.96"
- June 2 0.46"
- June 9 0.85"
- June 10 0.04"
- June 13 0.56"
- June 16 0.21"
- June 19 0.11"
- June 21 0.10"
- June 28 0.29"
- Total/June 2.62"
- July 1 0.08"
- July 9 0.06"
- July 11 0.29"
- July 12 0.04"
- July 17 0.02"
- July 19 0.15"
- July 22 0.02"
- July 25 0.02"
- Total/July 0.68"
- Total/August 1.55"
- Total/September 2.99"

Damage ratings: July 31 & August 1

Harvest date: October 2 & 3

Yield sample size: 2 center rows x 35 ft length (70 row-ft total)
Location: Manvel (Grand Forks County), ND – Stuart Ferry Farm – Wireworm Management Trial

Seed variety: Betaseed 80RR52

Plot size: Two 25-ft long rows

Design: Randomized complete block, 4 replicates

Soil name: Bearden silty clay loam

Soil test: Organic matter = 8.0%  pH = 7.5

Soil texture: 9.7% sand  58.6 % silt  31.8% clay

Previous crop: Wheat (2016)

Soil preparation: Heavy harrow with vibra-shank and packer (1x immediately before planting)

Planting depth: 1.25"

Planting date: June 20

Herbicides applied: June 26  Roundup PowerMAX (32 fl oz/ac) + Stinger (2 fl oz/ac) + AMS (1 lb)

Fungicides applied: July 18  Penncozeb (2 lbs) + Inspire XT (7 fl oz/ac) + Surfactant (3.2 fl oz/ac)
                       Aug. 10  Topsin (16 fl oz/ac) + Supertin (8 fl oz/ac)
                       Sept. 7  Priaxor (6.7 fl oz/ac) + Surfactant (3.2 fl oz/ac)

Rainfall:  
  (after seedbed preparation):
        June 21  0.06"
        June 24  0.02"
        June 28  3.69"
  Total/June  3.77"
        July 1  0.06"
        July 4  0.19"
        July 9  0.03"
        July 11  0.52"
        July 17  0.13"
        July 20  0.02"
        July 22  0.03"
  Total/July  0.98"
  Total/August  0.69"
  Total/September  4.21"

Stand counts: June 30; July 7, 13, and 27

Harvest date: October 9

Yield sample size: 2 rows x 25 ft length (50 row-ft total)
Location: Prosper (Cass County), ND – NDSU Experiment Farm – *Springtail Management Trial*

Seed variety: Betaseed 80RR52

Plot size: Two 25-ft long rows

Design: Randomized complete block, 4 replications

Soil name: Bearden-Lindaas silty clay loam

Soil test: Organic matter = 3.4%  
            pH = 7.1

Soil texture: 27.0% sand  
              46.5% silt  
              26.6% clay

Previous crop: Wheat (2016)

Soil preparation: Field cultivator (2x)

Planting depth: 1.25”

Planting date: May 19

Herbicides applied:  

<table>
<thead>
<tr>
<th>Date</th>
<th>Herbicides Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 1</td>
<td>Roundup PowerMAX (32 fl oz/ac) + Class Act (1% v/v) +</td>
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<tr>
<td></td>
<td>Interlock (12 fl oz/ac)</td>
</tr>
<tr>
<td>June 19</td>
<td>Roundup PowerMAX (32 fl oz/ac) + Class Act (1% v/v) +</td>
</tr>
<tr>
<td></td>
<td>Interlock (4 fl oz/ac)</td>
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<tr>
<td>July 10</td>
<td>Roundup PowerMAX (32 fl oz/ac) + Class Act (1% v/v) +</td>
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<tr>
<td></td>
<td>Interlock (4 fl oz/ac)</td>
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Fungicides applied:  

<table>
<thead>
<tr>
<th>Date</th>
<th>Fungicides Applied</th>
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<tbody>
<tr>
<td>June 6</td>
<td>Quadris (14.3 fl oz ac)</td>
</tr>
<tr>
<td>June 19</td>
<td>Quadris (14.3 fl oz ac)</td>
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<tr>
<td>July 21</td>
<td>Inspire XT (5.3 fl oz/ac) + Topsin (7.6 fl oz/ac)</td>
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<tr>
<td>Aug. 2</td>
<td>Super Tin (6 fl oz/ac) + Manzate (1.2 qt/ac)</td>
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</table>

Rainfall:  

<table>
<thead>
<tr>
<th>Date</th>
<th>Rainfall (in)</th>
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<tbody>
<tr>
<td>May 20</td>
<td>0.38&quot;</td>
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<tr>
<td>May 23</td>
<td>0.03&quot;</td>
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<tr>
<td>May 27</td>
<td>0.07&quot;</td>
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<tr>
<td>May 28</td>
<td>0.03&quot;</td>
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<tr>
<td>May 29</td>
<td>0.03&quot;</td>
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<tr>
<td>Total/May</td>
<td>0.54&quot;</td>
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<tr>
<td>June 6</td>
<td>0.33&quot;</td>
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<tr>
<td>June 7</td>
<td>0.09&quot;</td>
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<tr>
<td>June 9</td>
<td>0.29&quot;</td>
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<tr>
<td>June 11</td>
<td>0.17&quot;</td>
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<tr>
<td>June 13</td>
<td>1.85&quot;</td>
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<tr>
<td>June 17</td>
<td>0.45&quot;</td>
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<tr>
<td>June 27</td>
<td>0.08&quot;</td>
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<tr>
<td>June 28</td>
<td>0.20&quot;</td>
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<tr>
<td>Total/June</td>
<td>3.46&quot;</td>
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<tr>
<td>July 4</td>
<td>0.63&quot;</td>
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<tr>
<td>July 6</td>
<td>0.23&quot;</td>
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<tr>
<td>July 9</td>
<td>0.04&quot;</td>
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<tr>
<td>July 18</td>
<td>0.47&quot;</td>
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<tr>
<td>July 21</td>
<td>0.16&quot;</td>
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<tr>
<td>July 22</td>
<td>0.15&quot;</td>
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<tr>
<td>July 31</td>
<td>0.29&quot;</td>
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</tbody>
</table>
Total/July       1.97"
Total/August    2.07"
Total/September 0.22"

Stand counts:       June 1, 15, and 29; July 7
Harvest date:       September 18
Yield sample size:  2 rows x 25 ft length (50 row-ft total)
Location: Hillsboro (Traill County), ND – Glen Hultin Farm – Small-plot Seed Lubricants Test

Seed variety: Betaseed 83CN Mini Pellet & 83CN Pro200 Pellet

Plot size: Six 35-ft long rows, 4 center rows treated

Design: Randomized complete block, 4 replications

Soil name: Bearden–Perella silty clay loam

Soil test: Organic matter = 4.5%  pH = 7.8

Soil texture: 9.1% sand  54.8% silt  36.2% clay

Previous crop: Wheat (2016)

Soil preparation: Harrow packer (1x)

Planting depth: 1.25"

Planting date: May 15

Herbicides applied: June 5 Roundup PowerMAX (32 fl oz/ac) + Veracity (3 qt/100 gal)
  June 29 Roundup PowerMAX (22 fl oz/ac) + Veracity (3 qt/100 gal)

Fungicides applied: Aug. 10 Topsin (7.5 fl oz/ac) + Inspire XT (7 fl oz/ac)

Rainfall (after seedbed preparation):

<table>
<thead>
<tr>
<th>Date</th>
<th>May 20</th>
<th>0.30&quot;</th>
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<tbody>
<tr>
<td>May 21</td>
<td>0.06&quot;</td>
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<tr>
<td>May 28</td>
<td>0.15&quot;</td>
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Total/May: 0.51"

June 2 0.03"
June 7 0.14"
June 11 0.18"
June 13 0.84"
June 17 0.35"
June 19 0.04"
June 28 1.30"

Total/June: 2.88"

July 4 0.22"
July 5 0.10"
July 6 0.19"
July 11 0.34"
July 18 0.10"
July 21 0.12"
July 22 0.28"
July 31 0.23"

Total/July: 1.58"

Total/August: 0.61"

Total/September: 0.66"

Stand counts: June 1, 15, and 29

Harvest date: September 19

Yield sample size: 2 center rows x 35 ft length (70 row-ft total)
Location: Glyndon (Clay County), MN – David Watt Farm – *On-farm Seed Lubricants Test*

Seed variety: Betaseed 8572

Plot size: Twelve 600-ft long rows

Design: Randomized complete block, 4 replicates

Soil name: Glyndon loam

Soil test: Organic matter = 4.0%  

pH = 7.8

Soil texture: 11.1% sand  62.1% silt  26.9% clay

Previous crop: Wheat (2016)

Soil preparation: Field cultivator with packer (1x)

Planting depth: 1.25"

Planting date: May 1

Herbicide applied:  

- May 19: Roundup PowerMAX (28 fl oz/ac) + Brawl (1 pt/ac)  
- June 12: Roundup PowerMAX (28 fl oz/ac) + Brawl (1 pt/ac)

Fungicides applied:  

- July 7: Inspire (7 fl oz/ac) + Manzate (1 qt/ac)  
- July 29: Tin (8 fl oz/ac) + Topsin (10 fl oz/ac)  
- Aug. 18: Proline (7 fl oz/ac)

Rainfall  

<table>
<thead>
<tr>
<th>Date</th>
<th>Rainfall (in)</th>
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<tbody>
<tr>
<td>May 5</td>
<td>0.07&quot;</td>
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<tr>
<td>May 16</td>
<td>0.28&quot;</td>
</tr>
<tr>
<td>May 20</td>
<td>0.50&quot;</td>
</tr>
<tr>
<td>May 28</td>
<td>0.19&quot;</td>
</tr>
<tr>
<td><strong>Total/May</strong></td>
<td><strong>1.04&quot;</strong></td>
</tr>
<tr>
<td>June 7</td>
<td>0.04&quot;</td>
</tr>
<tr>
<td>June 11</td>
<td>0.19&quot;</td>
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<tr>
<td>June 13</td>
<td>1.36&quot;</td>
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<tr>
<td>June 17</td>
<td>0.11&quot;</td>
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<tr>
<td>June 27</td>
<td>0.19&quot;</td>
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<tr>
<td>June 28</td>
<td>0.30&quot;</td>
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<tr>
<td><strong>Total/June</strong></td>
<td><strong>2.26&quot;</strong></td>
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<tr>
<td>July 4</td>
<td>0.20&quot;</td>
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<tr>
<td>July 6</td>
<td>0.03&quot;</td>
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<tr>
<td>July 9</td>
<td>0.05&quot;</td>
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<tr>
<td>July 18</td>
<td>0.22&quot;</td>
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<tr>
<td>July 22</td>
<td>0.19&quot;</td>
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<tr>
<td>July 31</td>
<td>0.19&quot;</td>
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<tr>
<td><strong>Total/July</strong></td>
<td><strong>0.89&quot;</strong></td>
</tr>
<tr>
<td><strong>Total/August</strong></td>
<td><strong>2.29&quot;</strong></td>
</tr>
<tr>
<td><strong>Total/September</strong></td>
<td><strong>2.75&quot;</strong></td>
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</tbody>
</table>

Stand counts: May 24; June 1 and 22

Harvest date:  

- Hand harvest – October 12  
- Machine harvest – October 16

Yield sample size:  

- Hand harvest – four 0.00025-ac samples per plot  
- Machine harvest – twelve 50-ft long rows per plot