Pre-harvest drop of McIntosh apples as affected by Fruitone-N® and Fruitone-L® alone or in combination with AVG

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Materials and Methods

- 15 year old commercial orchard of ‘McIntosh’/M.26
- 4.26 m x 6.1 m (385 trees/ha)
- commercial air blast sprayer
- single tree plots at 1379 kPa, 1995 L/ha
- RCBD with six replications and 8 treatments
- Treatments applied 21 August (3-4 WBH) and 2 September (1 WBH)
- Fruit were harvested 9 -16 September
Treatments

1. Untreated control
2. 20 mg/L NAA (Fruitone L) 1 WBH
3. 10 mg/L NAA (Fruitone L®) 1 and 2 WBH
4. 10 mg/L NAA (Fruitone N®) 1 and 2 WBH
5. 62.5 mg/L AVG (50% rate of Retain) 4 WBH combined with NAA 1 WBH
6. Tank mix 62.5 mg/L AVG (50% rate of ReTain) and NAA (Fruitone L®) 4 WBH
7. 62.5 mg/L AVG (50% rate of ReTain) applied 4 WBH
8. 123 mg/L AVG (50 grams AVG per acre) applied 4 WBH plus NAA (Fruitone L®) applied 4 WBH
Figure 2. Cumulative fruit drop of 'McIntosh' apples in response to Fruitone (NAA)

Cumulative fruit drop (% by number)

- Untreated Control
- 20 mg/L NAA (Fruitone L) 1 WBH 20
- 10 mg/L NAA (Fruitone L) 1 and 2 WBH 10
- 10 mg/L NAA (Fruitone N) 1 and 2 WBH 10
- 50% Rate of Retain 4 wbh Plus NAA 1 WBH 62.5,10
- Tank Mix 50% Rate of Retain & NAA 4 WBH 62.5,10
- 50% Rate of Retain 4 WBH 62.5
- Full Rate of Retain 4 WBH Plus NAA 4 WBH 125,10

Dates:
- Sept. 2
- Sept. 8
- Sept. 11
- Sept. 16
Untreated control
20 ppm NAA (Fruitone L) 1 WBH
10 ppm NAA (Fruitone L) 1 & 2 WBH
Tank Mix 50% Rate of Retain & NAA 4 WBH
Table 7. Effect of Fruitone N and Fruitone L, alone or in combination with ReTain, on surface blush, starch index, mean fruit weight, soluble solids, and firmness of fruit harvested 9 Sept and 15 September and stored until 29 September 2008.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Percent of surface colour red (%)</th>
<th>Starch Index (scale 1-8)</th>
<th>Mean fruit wt (g)</th>
<th>Soluble solids (BRIX)</th>
<th>Fruit Firmness 9 Sept (N)</th>
<th>Fruit firmness 29 Sept (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated Control</td>
<td>78</td>
<td>5.7</td>
<td>156</td>
<td>10.8</td>
<td>62.6 ed</td>
<td>59.7 b</td>
</tr>
<tr>
<td>20 mg/L NAA (Fruitone L) 1 WBH†</td>
<td>20</td>
<td>83</td>
<td>163</td>
<td>11.2</td>
<td>60.6 f</td>
<td>52.7 d</td>
</tr>
<tr>
<td>10 mg/L NAA (Fruitone L) 1 and 2 WBH</td>
<td>10</td>
<td>87</td>
<td>157</td>
<td>11.0</td>
<td>61.6 ef</td>
<td>55.2 c</td>
</tr>
<tr>
<td>10 mg/L NAA (Fruitone N) 1 and 2 WBH</td>
<td>10</td>
<td>84</td>
<td>149</td>
<td>11.1</td>
<td>63.1 ecd</td>
<td>55.3 c</td>
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<tr>
<td>50% Rate of Retain 4 wbh Plus NAA 1 WBH</td>
<td>62.5, 10</td>
<td>78</td>
<td>154</td>
<td>10.8</td>
<td>64.8 bc</td>
<td>64.0 a</td>
</tr>
<tr>
<td>Tank Mix 50% Rate of Retain &amp; NAA 4 WBH</td>
<td>62.5, 10</td>
<td>76</td>
<td>153</td>
<td>10.7</td>
<td>65.4 ab</td>
<td>63.4 a</td>
</tr>
<tr>
<td>50% Rate of Retain 4 WBH</td>
<td>62.5</td>
<td>76</td>
<td>150</td>
<td>11.0</td>
<td>67.0 a</td>
<td>63.4 a</td>
</tr>
<tr>
<td>Full Rate of Retain 4 WBH Plus NAA 4 WBH</td>
<td>125, 10</td>
<td>72</td>
<td>157</td>
<td>10.8</td>
<td>64.5 bcd</td>
<td>63.2 a</td>
</tr>
<tr>
<td>Significance‡</td>
<td>***</td>
<td>***</td>
<td>ns</td>
<td>ns</td>
<td>***</td>
<td>***</td>
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<tr>
<td>LSD (P=0.05)</td>
<td>5.7</td>
<td>0.39</td>
<td>13.9</td>
<td>0.54</td>
<td>1.9</td>
<td>2.1</td>
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<tr>
<td>P value</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
<td>0.5643</td>
<td>0.5754</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

‡ ns, ***, **, *, indicates non significance and statistical significance at P=0.001, P=0.01, and P=0.05, respectively

† WBH - Weeks Before Harvest
Acknowledgements

Ontario

AMVAC

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