Asparagus Variety Evaluation — 2013

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There are currently about 65 acres of asparagus being grown in Kentucky. Since asparagus plantings are typically harvested for 20 or more years, it is important to evaluate newer varieties to enable informed planting decisions. Eight varieties of asparagus are being grown in a long-term replicated trial to assess their yields under Central Kentucky growing conditions.

Materials and Methods
One-year-old crowns were purchased from Walker Brothers Plant Company and transplanted on May 31, 2011, at the UK Horticulture Research Farm in Lexington. Six-inch-deep furrows were dug in planting rows and crowns were planted at a 14 inch in-row spacing, with 5 feet between rows. This spacing is equivalent to a planting density of 5,808 plants per acre. Varieties are replicated four times in a randomized complete block design. Plot rows consist of 10 plants of a particular variety, for a total of 40 plants of each variety.

Four hundred pounds of 19-19-19 fertilizer per acre were applied in furrow prior to transplanting. Drip irrigation was installed to aid plot establishment for the first growing season. Prior to spear emergence, Sandea herbicide was applied to the field at a rate of 1 oz/A. No asparagus spears were harvested during the 2011 growing season.

In early spring 2012, plant residues were mowed off prior to spear emergence. Two hundred pounds per acre of 19-19-19 fertilizer were broadcast on the plot. Chateau herbicide was applied at a rate of 6 oz/A. After spear emergence in late spring, Sandea herbicide was applied at a rate of 1 oz/A, and again in midsummer at the same rate. Again, no asparagus was harvested.

On March 28, 2013, plant residues were mowed and an herbicide mixture of Gramoxone at 4 pt/A and Chateau at 6 oz/A was applied to the plot. At this time 19-19-19 granular fertilizer was broadcast at a rate of 100 pounds of nitrogen per acre. Spears initially emerged on April 10. Harvest began on April 13 and continued until June 5. Spears were harvested two or three times per week. Marketable spears, those 5 to 12 inches in length, were harvested and measured for weight and diameter. During this time, weeds were controlled by hand cultivation as needed. On June 15, Select Max herbicide was applied at a rate of 16 oz/A to control perennial grasses. Carbaryl 4L was applied on May 5 at a rate of 1 oz/A to control asparagus beetles. This single application suppressed insect pests and no other pesticides were applied.

Results and Discussion
Harvest data for the eight asparagus varieties can be found in Table 1. There were no significant differences in spear width among varieties. Jersey Supreme, Grande, and Atlas were the top performers for the first harvest year. Purple Passion yielded the least amount of marketable spears, nevertheless its unique coloration may allow for increased marketability. Overall, yields for all varieties were lower than expected, but crown productivity should increase over the next few growing seasons.
Acknowledgements
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Table 1. Asparagus yield results, 2013.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Yield per Plant¹ (lb)</th>
<th>Yield per Acre² (lb)</th>
<th>Weight per Spear³ (oz)</th>
<th>No. Spears per Plant⁴</th>
<th>Spear Width (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jersey Supreme</td>
<td>0.54 a⁵</td>
<td>3,136</td>
<td>0.39</td>
<td>22.2</td>
<td>0.39</td>
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<tr>
<td>Grande</td>
<td>0.53 a</td>
<td>3,078</td>
<td>0.42</td>
<td>20.1</td>
<td>0.39</td>
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<tr>
<td>Atlas</td>
<td>0.50 ab</td>
<td>2,904</td>
<td>0.43</td>
<td>18.6</td>
<td>0.41</td>
</tr>
<tr>
<td>Jersey Giant</td>
<td>0.43 abc</td>
<td>2,497</td>
<td>0.36</td>
<td>20.3</td>
<td>0.36</td>
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<tr>
<td>Apollo</td>
<td>0.38 bcd</td>
<td>2,207</td>
<td>0.38</td>
<td>15.9</td>
<td>0.38</td>
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<tr>
<td>UC-157</td>
<td>0.34 cd</td>
<td>1,975</td>
<td>0.35</td>
<td>15.7</td>
<td>0.36</td>
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<tr>
<td>Jersey Knight</td>
<td>0.32 cd</td>
<td>1,859</td>
<td>0.36</td>
<td>14.2</td>
<td>0.36</td>
</tr>
<tr>
<td>Purple Passion</td>
<td>0.24 d</td>
<td>1,394</td>
<td>0.43</td>
<td>8.9</td>
<td>0.37</td>
</tr>
</tbody>
</table>

¹Average yield per plant for the entire season.
²Seasonlong average yield per plant x 5,808 plants per acre.
³Average weight per spear for the entire season.
⁴Average seasonlong weight per plant divided by average seasonlong weight per spear.
⁵Means in column followed by same letter are not significantly different (Waller-Duncan Multiple-Range Test (P≤0.05)).