2015 Virginia Hop Grower Survey: Results

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Hops (Humulus lupulus) are an essential component of beer production. Though hops have been grown in Virginia since the 1700s, Virginia hop production has been minor in past decades. Most major hop production in the U.S. takes place in Washington, Oregon, and Idaho. However, in recent years, the number of craft breweries in Virginia has increased and interest in local hop production has grown. Virginia Cooperative Extension has seen a steady increase in requests for hop-focused information and resources. Prior to 2014, no systems were in place to formally assess the scope of the Virginia industry, and national hop acreage reports did not provide data for Virginia. In 2014, Virginia Cooperative Extension faculty developed and distributed the first Virginia hop grower survey and shared the results in a publication. The state-wide survey effort was updated and repeated in 2015.

Survey Process
We developed and distributed the survey to Virginia hop growers in August-October 2015 to evaluate the status of the industry, draw comparisons to the 2014 survey, and develop benchmarks for future growth assessments. The survey was developed with Qualtrics online survey software and administered by Virginia Cooperative Extension.

The survey was marketed and distributed as widely as possible through email lists, grower groups, Extension agents, and social media. Industry stakeholders also assisted with distribution. As a result, exact survey distribution and the resulting response rate are not known. Because some Virginia growers maintain very small plantings and mixed-use plantings, survey outreach efforts did not differentiate between hobby and commercial grower target audiences; beginning and prospective growers were also included in outreach efforts since portions of the survey assessed projected hop plant population increases for 2016. Actual statewide yield and total plant numbers may differ from those shown in this survey because it is possible that some growers chose not to complete the survey or that some growers were not reached by the survey. Furthermore, growers had the option to omit questions as desired, so not all respondents chose to report yield and other specific information.

Though national reports supply acreage statistics for the major hops-producing states, we primarily assessed the total number of plants on Virginia operations. Many Virginia growers have hop yards of less than one acre, and trellis design and spacing vary. For these reasons, we asked growers to report cultivars grown and the number of plants for each cultivar. For our yield report, we asked growers to distinguish between pounds of wet hops harvested and pounds of dried hops harvested since some growers choose to weigh their hops at harvest while others choose to weigh them after processing.
Survey Results: Hops in Virginia – Scope of the Industry
The following sections highlight key 2015 survey findings.

Grower Characterization
Table 1. Survey Participation.

<table>
<thead>
<tr>
<th>Survey Year</th>
<th>Number of Survey Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>46</td>
</tr>
<tr>
<td>2015</td>
<td>78</td>
</tr>
</tbody>
</table>

Table 2. Grower Classification.

<table>
<thead>
<tr>
<th>Grower Classification</th>
<th>Percentage of Respondents Matching Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2015</td>
</tr>
<tr>
<td>I am growing hops commercially/I intend to sell my hops</td>
<td>48%</td>
</tr>
<tr>
<td>I am currently growing hops for my personal use/for non-commercial purposes</td>
<td>24%</td>
</tr>
<tr>
<td>I am not yet growing hops, but planning on it</td>
<td>9%</td>
</tr>
<tr>
<td>Other</td>
<td>8%</td>
</tr>
</tbody>
</table>

Grower Experience

![Figure 1. 2014 Years of Experience Growing Hops.](image)
Figure 2. 2015 Years of Experience Growing Hops.

Cultivar Distribution and Yield
Growers provided a list cultivars grown, number of plants of each cultivar, and harvest data expressed in “wet” and/or “dried” pounds, as measured by the grower.

2015 Hop Cultivars Reported in Virginia, Shown by Number of Plants and Percent of Total Plants

Figure 3. 2015 Cultivar Distribution
To protect the confidentiality of grower data, the “other” designation was utilized for any cultivars with fewer than 50 reported plants in the state OR any cultivars grown by only one respondent. The “other” category also includes data from growers who reported plants but did not specify cultivars or provide data by cultivar.

**Totals for plants reported as “CTZ,” “Columbus,” and “Zeus” were reported as “CTZ.”**

Plant counts per year are shown in Table 3; yield by cultivar for 2015 is detailed in Table 4.

<table>
<thead>
<tr>
<th>Survey Year</th>
<th>Total Number of Plants Reported in Virginia</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>13,317</td>
</tr>
<tr>
<td>2015</td>
<td>13,912</td>
</tr>
</tbody>
</table>

Table 4. 2015 Hop Yield Report.

<table>
<thead>
<tr>
<th>Cultivar</th>
<th># Crowns</th>
<th>Reported Wet Yield (pounds)</th>
<th>Reported Dried Yield (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cascade</td>
<td>9,376</td>
<td>4,057</td>
<td>83</td>
</tr>
<tr>
<td>Chinook</td>
<td>1,532</td>
<td>309</td>
<td>19</td>
</tr>
<tr>
<td>CTZ</td>
<td>1,099</td>
<td>181</td>
<td>23</td>
</tr>
<tr>
<td>Nugget</td>
<td>428</td>
<td>37</td>
<td>3</td>
</tr>
<tr>
<td>Centennial</td>
<td>222</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Magnum</td>
<td>149</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Willamette</td>
<td>144</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Mt Hood</td>
<td>64</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Sorachi Ace</td>
<td>51</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other*</td>
<td>847</td>
<td>109</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13,912</strong></td>
<td><strong>4,803</strong></td>
<td><strong>141</strong></td>
</tr>
</tbody>
</table>

**Total estimated yield, dried basis**: 1,102

* The figures shown represent the values growers provided. Growers reported wet yield (for harvested batches that were measured wet/fresh) or dried yield (for hops that were measured in a dried state). Some growers were unable to report harvest data with their plant and cultivar totals, and some chose only to report plant numbers or to omit this question.

**This figure includes total reported pounds of dried hops, plus the total reported pounds of wet hops converted to a dried and pelletized basis. This relies upon an estimated wet-hop-to-dried-hop conversion rate (1:5) and an assumption of 8% moisture pelletized. This conversion rate was guided by input provided by industry personnel. Please note, however, that yield converted to a dried basis is an estimate only—other factors during processing and variations in actual moisture leave room for deviations between estimated dried yield and any actual dried yield.
Table 5. Plant and Yield Comparisons.

<table>
<thead>
<tr>
<th>Year-by-Year Comparison of Plant Totals and Reported Yield</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Plants</td>
<td>13,371</td>
<td>13,912</td>
</tr>
<tr>
<td>Total estimated yield, dried basis</td>
<td>1,622</td>
<td>1,102</td>
</tr>
</tbody>
</table>

Hop Sales
Form in which harvested hops were sold (respondents could select multiple answers):

2014
- 64% of respondents sold wet hops.
- 11% of respondents sold dried hops.
- 10% of respondents sold dried and pelletized hops.

2015
- 87% of respondents sold wet hops.
- 47% of respondents sold dried hops.
- 17% of respondents sold dried and pelletized hops.

Self-identified “commercial grower” respondents reported on their ability to sell their 2015 harvest. 20 respondents reported that they were able to sell their entire 2015 harvest. 21 respondents reported that they did not sell their entire 2015 harvest, citing the following reasons:
- Lack of interest by local brewers
- Brewer seeking pellets, not interested in wet hops
- Lack of yield
- Cone quality issues
- Grower is holding hops to sell at a later date (in dried form)
- Lack of knowledge about available markets.
- Crop failure from previous year
- Grower needed to process after harvest but did not have equipment

Future Growth
Growers commented on their expansion plans. On the 2015 survey, growers indicated a collective planned increase of 8,000 plants to the existing total of 13,912.

Grower Outlook
Using their experiences, observations, and personal feelings, growers rated their perceptions and outlooks on the Virginia hops industry.
Marketing
Growers described how they marketed their crop in 2015. Their most common responses are broadly categorized below:

- Personal meetings
- Yard tours
- Phone calls
- Emails
- Facebook
- Webpages
- Brewer approached grower first
- Volunteering with brewery
- Long-standing relationships
- Free hops samples for trial
- Word of mouth
- Online sales
- Sales to home brewers
- Sales for non-traditional uses

Challenges
Growers were asked to describe their greatest challenges in hops production. Their most common responses are broadly categorized below:

- Marketing
- Time
- Lack of knowledge, education, or a critical resource
• Insects
• Weeds
• Labor
• Trellis, irrigation, and other infrastructure
• Disease
• Fertilizer
• Cost
• Organic production
• Harvest
• Processing
• Land or available space
• Balancing hops production and day job
• Managing a long-distance farm
• “It’s farming.”

Summary
General interest in hops appears to remain strong; meanwhile, many growers who entered the industry during the initial rise in interest are reaching the 3-4 year mark at which their hop plantings are becoming mature. Growers believe that most brewers in the state are now familiar with the presence of the local hops industry. Several growers are exploring new options to expand production, expand markets, and process hops in order to sell packaged whole dried cones or pellets. Extension agents and specialists have new resources to serve hop growers. The Old Dominions Hops Cooperative also reported increased interest in 2015, and membership has doubled over the past two years. To date, growers can be found in most regions of Virginia.