

2014 Virginia Hops Grower Survey - Scope of the Industry

Laura Siegle, Agriculture and Natural Resources Agent, Amelia County, Virginia Cooperative Extension

Holly Scoggins, Associate Professor, Department of Horticulture, Virginia Tech
Stan Driver and Devon Kistler, Old Dominion Hops Cooperative



Introduction

Hops (*Humulus lupulus*) are an essential component of beer production. Though hops have been grown in Virginia since the 1700's, Virginia hops production has been relatively insignificant until the past decade. Most major hops 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 hops production appears to have grown. The number of requests from current and potential growers seeking information and resources from Virginia Cooperative Extension has also increased steadily. Unfortunately, prior to 2014, no means was available to formally assess the scope of the industry, and national hop acreage reports did not provide data for Virginia.

Survey Process

We developed and distributed a survey in to Virginia hop growers in September of 2014 to evaluate the status of the industry and provide a benchmark for future growth assessments. The survey was developed with Qualtrics® online survey software and administered on behalf of Virginia Cooperative Extension. The survey was marketed and distributed as widely as possible through email lists, grower groups, county agents, and social media. Industry stakeholders also assisted with distribution. Therefore, exact survey distribution and thus response rate (%) is not known. Statewide yield and total plant numbers may be higher than shown in this survey in the event that a grower chose not to complete the survey or if a grower was unknown to the survey administrators.

Though national reports include hops acreage, we chose instead to assess the total number of

plants on Virginia operations. Unlike hops producers in states like Washington, many Virginia growers have hop yards of less than one acre, and trellis spacing is not standardized. For these reasons, we believed that it would be difficult to get a highly accurate acreage estimate. Instead, we asked growers to report varieties grown, number of plants for each variety, and maturity of each set of plants in years. It should also be noted that yield was reported as "wet pounds harvested" since most growers use this benchmark in recordkeeping and few Virginia growers dried and weighed their hops in 2014.

Survey Results

Our results indicate most hop plants in Virginia are three years old or less. This correlates with our observations that the state experienced a rapid increase in the number of growers in 2012 and 2013, while a handful of growers have been in existence for a longer period of time. Although not all growers reported yields, the yields that were provided were consistent with expectations for new yards with young plants. Hop plants do not produce heavily until they reach three or more years in the field. As the maturity of each hop yard increases, yields are expected to increase. Interestingly, twenty-four out of forty-six respondents indicated plans to expand their operations for the 2015 growing season. Though several hop varieties were reported as in production, Cascade was far and away the most widely grown. Detailed survey results are reported as follows, as well as information on University/VCE resources and services.

Hops in Virginia – Scope of the Industry Survey

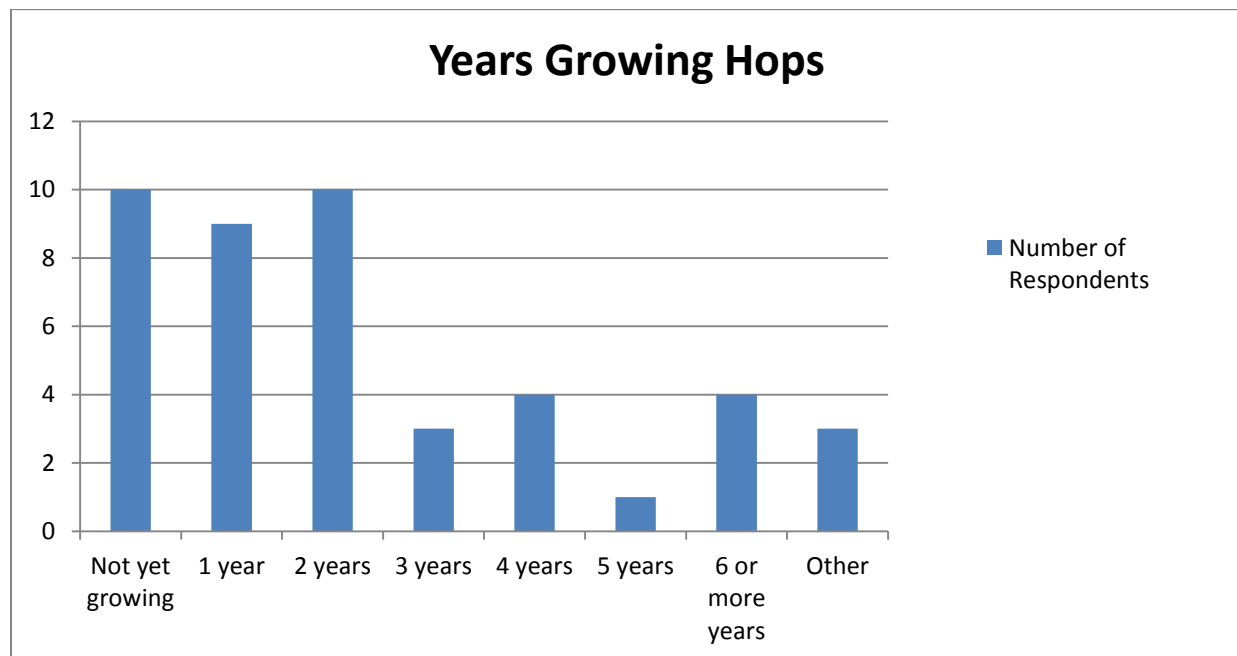
Administered September, 2014

1. Number of respondents to survey: 46

2. Respondent’s level of involvement in hops growing:

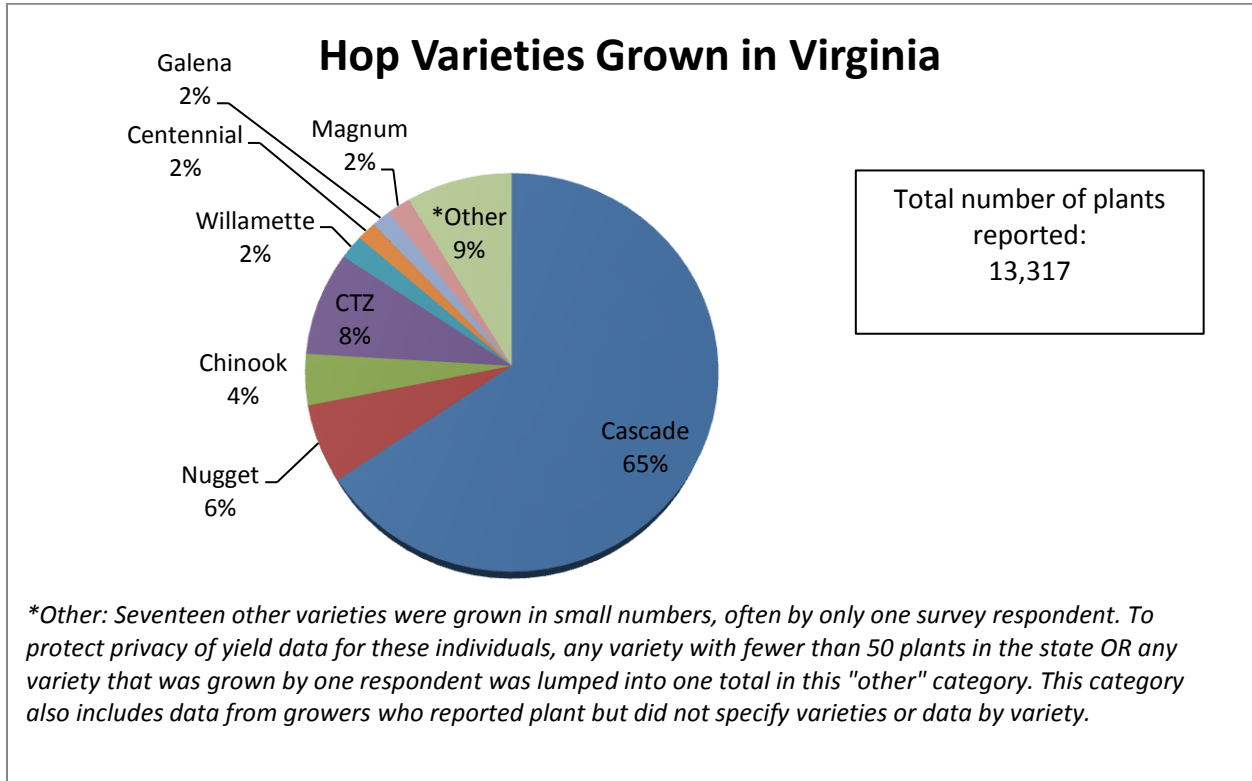
Grower Classification	Percent of Respondents Matching Criteria
I am growing hops commercially/I intend to sell my hops	48%
I am currently growing hops for my personal use/for non-commercial purposes	24%
I am not yet growing hops, but planning on it	24%
Other	4%

3. Respondent’s number of years’ experience growing hops:



4. Growers were asked to complete a yield table for 2014, including variety grown, number of crowns of each variety and the plant’s maturity (years), and harvest/yield expressed as pounds of wet hops.

- Hop varieties grown as reported by respondents:



- Harvest Yield Data

2014 Yield Data	
Variety	Pounds Harvested (Wet)
Cascade	5667
Chinook	210
CTZ	187
Nugget	129
Willamette	10
Centennial	4
Galena	0
Magnum	0
*Other	1902
**Total Yield	8109 Pounds (Wet)

* *Other: Seventeen other varieties were grown in small numbers, often by only one survey respondent. To protect privacy of yield data for these individuals, any variety with fewer than 50 plants in the state OR any variety that was grown by one respondent was lumped into one total in this "other" category. This category also includes data from growers who reported plants but did not specify varieties or data by variety.

**Some growers were unable to report harvest data with their plant and variety totals. The figure represents the values that were provided.

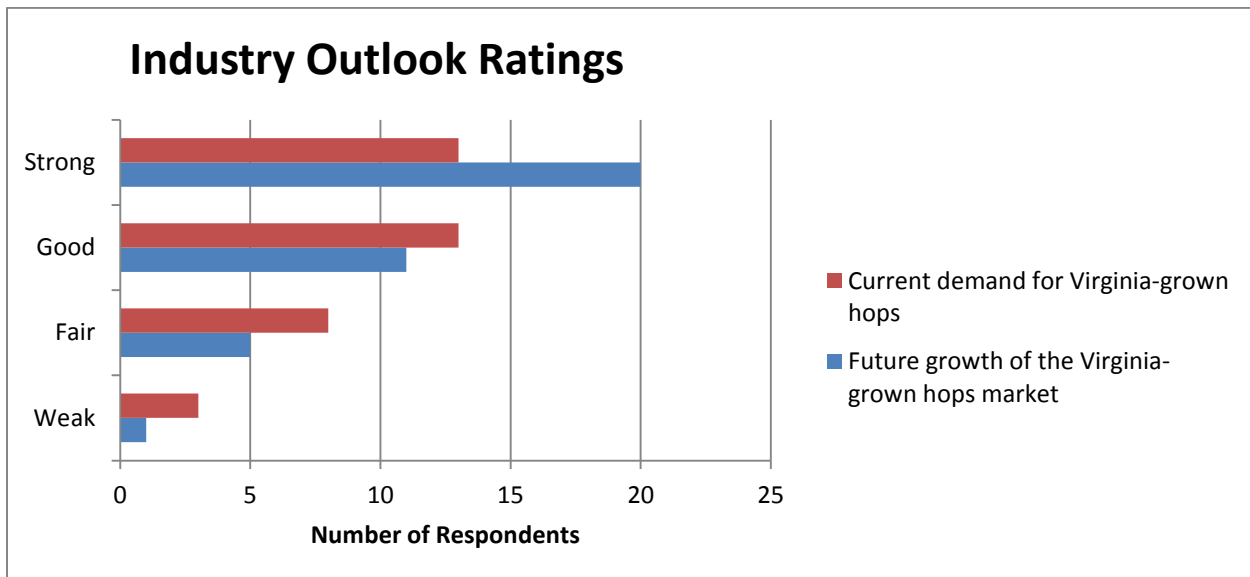
5. Form that harvested hops were sold in: Of the 8,109 pounds harvested, 65% was sold wet. 11% was sold dried, and 10% was sold pelletized. For the remaining 14%, hops were not sold or the grower did not indicate the form in which they were sold.

6. Commercial growers were asked if they were able to sell all of their 2014 crops-should this be crop?, and if not, why: Eleven respondents reported that they were able to sell their entire 2014 crop. Ten respondents reported they were unable to sell their entire 2014 crop. The following reasons were noted:

- Hops did not produce enough to sell
- Too many wet hops were ready at one time
- No buyer was available
- Grower lacked time, resources, and/or knowledge to market crop
- Demand
- Holding hops for later sale

7. Growers were asked if they plan to expand in 2015 and if so, estimate the additional number of crowns: Twenty-four growers reported plans to expand in 2015 and provided estimates indicating a collective increase of 7,760 to over 8,000 plants to the existing total.

8. Growers were asked to describe their personal perception of current demand and future growth of the Virginia-grown hops market:



9. Growers were asked to describe how they marketed their crop in 2014. Their responses are broadly categorized and summarized below:

Number of Growers Using this Method	Marketing Method
7	Meetings with brewers
4	Emails
4	Phone calls
3	Word of mouth
2	Social media
2	Brewer visits to hop yard
1	Outreach to brewing clubs

Several respondents noted they were farm breweries or home brewers who used their own hops and therefore did not need to market them.

10. Growers were asked to explain their greatest challenges growing hops. Because many comments echoed one another, they were categorized and summarized:

Number of Growers Noting this Challenge	Challenge	Summaries of Comments from Growers
9	Time	Not as much available time as desired for chores
9	Marketing	Product quality, coordinating delivery of wet hops with brewer, demand from buyers
8	Labor	Particularly challenging during spring chores and harvest; also costly
8	Harvest efficiency	Labor and time-intensive, even when mechanized
5	Cost	Most challenging cost appears to be yard establishment
5	Weeds	
4	Disease	Some worried about downy mildew
3	Insects	Several specifically mentioned Japanese beetles
3	Lack of industry & university resources	Local information not readily available; difficulty finding plant material
3	Beginning grower "learning curve"	Some noted that getting started and learning to manage hops was a challenge of its own
2	Pesticide selection	Uncertainty about products labeled for use on hops; no VA hops pest management guide available
2	Rhizome establishment	Certain growers experienced rhizome failure
1	Fertilizer	Grower still learning and adjusting to plant needs
1	Irrigation	
1	Processing after harvest	Processing equipment/facility would be helpful for drying, pelletizing

11. Growers were provided with an opportunity to share successes, experiences, and outlook gained from 2014. Many comments were similar, so grower responses were interpreted and summarized below:

- **Marketing**
 - Local potential for growing and selling hops seems good.
 - Demand for Virginia hops seems strong.
 - Consumers are interested and excited about locally-grown hops.
 - Hops may not be profitable if demand is low and/or buyers can get them cheaper elsewhere.
 - Current cost per pound of wet hops is too high for most brewers. Brewers may be able to attain an acceptable margin if cost of wet hops decreased to \$10 or less per pound.
 - Influx of breweries is increasing demand; brewers want fresh hops; brewers are interested in local hops.
 - Competition between growers and lack of brewer willingness to use wet hops could negatively affect demand and outlook.
 - Hops may not be profitable if demand is low and/or buyers can get them cheaper elsewhere.
 - Some brewers have already locked up local suppliers and first-time grower had difficulty finding outlet. Market development/assistance from grower group could mitigate this.
- **Cultural practices (including resources)**
 - Relationships with cooperatives, fellow growers, and farming neighbors are valuable.
 - Several growers are pleased with Virginia Cooperative Extension, Virginia Tech, and Virginia State University involvement in the industry.
 - Several growers are re-evaluating variety selection in light of 2014 performance. Cascade remains popular.
- **Harvest and post-harvest considerations**
 - Having the capability to dry and/or pelletize hops in the future would be helpful.
 - Mechanized harvest is a necessity in the future, especially for larger yards.
 - Several growers were very pleased with 2014 harvest and look forward to adding new plants and/or varieties
- **Brewer interactions**
 - Connecting with brewers could be a challenge for some.
 - Only a handful of brewers released a local hopped beer this season.
 - Brewers are becoming acclimated to the considerations needed when working with Virginia growers and wet hops.
 - Only a handful of growers released a local hopped beer this season.

12. Growers were provided with an opportunity to describe any university and industry resources that they wish to see developed in the future:

Number of Growers Requesting Resource	Requested Resource
4	Shared harvesting equipment
4	Pest Management Guide
3	Hop breeding and research program
2	Hops production/management guide
2	Packing/drying facilities and services
1	Post-harvest handling guidelines

1	Faculty specializing in hops
1	Local rhizome source
1	Product approval system
1	Method to inform/educate VA brewers about VA hops
1	Great accessibility and feasibility concerning patented varieties
1	Tissue testing service
1	Outlets for developing and marketing alternative uses for hops

Additional resources and services available for Virginia hop growers:

Hops analysis service: The VT Enology Lab started offering hops acids and moisture analysis in July of 2014. Although other regional labs are doing similar analyses, the methods used only report total Alpha and total Beta acids. The lab offers those same methods, along with quantification of the acid components cohumulone/humulone, colupulone/lupulone. This method allows them to charge ~15% less than other labs with results available the same day samples are received. Aside from serving the industry at the stakeholder's request, the purpose of the service is to gather information about hops grown in the state. As time and interest grows, the lab will offer the complete suite of hops analysis including total essential oils and essential oil analysis. Contact your county Extension agent for the testing flyer, or email the lab directly for instructions: hops@vt.edu

Virginia Tech Soil Testing: There is now a crop code for hops at the soil testing lab, code 75. Soil sample results and the accompanying recommendations will account for the research-based nutrient requirements of hops. County Extension agents can provide the box and form that must be used to submit the sample.

Disease ID, weed ID, and insect ID: Your county Extension agent can assist with identification of these items and management recommendations. Agents also teach pesticide safety and certify private pesticide applicators, so agents can provide guidance for safely and responsibly selecting, storing, and apply pest control tools.

