

## **Overview and Considerations of the Craft Beer Market: Focus on Producing and Marketing Hops in Tennessee**

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Similar to other agricultural commodities, the market for hops production continues to evolve. Important trends for United States and southeast hops production include a slower growth rate in the craft beer industry, a plateauing of acreage increases outside the Pacific Northwest, and a move to more hop oil extraction (as opposed to selling the pelletized form).

Based on our analysis of data for the craft beer industry provided by the Brewers Association and on the referenced analysis by the Financial Times for hops, we see a slowdown in the growth rate of the craft brewing industry in the United States with a potential plateau due to consolidation and market saturation. For brewpubs in the United States between 2017 and 2018, the number of openings declined slightly by 2.4 percent (from 330 to 322); however, the number of closings increased by 16.9 percent from 77 to 90 (and a large increase from the 29 closings in 2013). For microbreweries in the United States in the same period, the number of openings declined by 6 percent (from 770 to 724) while the number of closings only increased slightly from 118 to 123, but with a much higher level of closings than in earlier years (for example 2016 saw 65 closings). We expect the slowdown in growth of the craft beer industry to continue as a result of a natural saturation in the market.

Possibly related, reported planted acreages outside the Pacific Northwest have reached a plateau. Twenty-six “other” states reported 2,504 acres of planted hops in 2017, while in 2018 approximately 2,433 acres (a 2.8 percent decline) were reported across the same states with most reporting no change in acreage (USA Hop Growers of America, 2019b). If the move to hop oil continues with brewers, one would expect even more concentration of production in Washington State resulting from their monopoly on facilities that can produce hop oil.

For the southeast and especially for Tennessee, we see ways around production issues as somewhat promising but not yet close to implementation. Accordingly, hops are likely to remain a niche market in the southeast with a strong reliance on wet hopping and strong ties to the local craft beer industry. We also see developing other beer additives, such as paw-paws, as holding at least some promise for interested producers. In this regard, local malting and perhaps even local barley malting varieties may hold some promise (Alfs, 2019), although the possibility of diseases for the latter remains a concern.

Craft beer has a hopping (hop use rate) typically in the 1.24 to 1.65 pounds per barrel of beer (31 gallons) range. Craft beer production in 2018 was estimated at 25.6 million barrels at 13.2 percent of the United States beer market volume with a value of \$27.6 billion and a dramatic increase from the 5.5 million barrels produced in 2003 (Brewers Association, 2019). Craft beers are more highly valued than their mass-produced counterparts; we calculate average price of craft beer as being 83.4 percent higher than the average price of other beer sold in the United States. As a result of the growth in the craft industry, hop acreage in the United States has increased from 38,892 acres in 2014 to 57,468 acres in 2018 (Hop Growers of American, 2019b).

While hops are vital to beer production, they constitute a relatively small part of the cost of producing even craft beer. We calculate that around 3.5 percent of revenue in the craft beer industry is devoted to purchasing hops (much less than is spent on malting barley, metal cans and/or glass bottles). The result is there is some leeway in the price that craft brewers can pay for hops, but prices can still have very large and rapid swings. Much of the change in prices are driven by a desire by craft brewers for different and new types of beer based on hops with varying levels and types of aromas and beta-based bittering. For example, the spot price paid for Citra, a relatively new aromatic variety, rose from approximately

\$16 per pound in 2014 to a peak of over \$23 per pound by the third quarter of 2015, only to decline to around \$13 per pound by the end of 2017 (Financial Times, 2019). Production levels of various types of hops varieties can change fairly rapidly; for example, Summit was the third most popular variety in 2013, but had dropped out of the top ten by 2018, while Citra rose from eighth in 2013, to becoming the most popular variety in 2018. Proprietary varieties, where producers pay the developer for the right of use, have become popular with five of the top ten varieties in 2018 plantings (Hop Growers of American, 2019). A possible slowdown in the growth of the U.S. craft beer industry (Brewers Association, 2019) and an increase in hops stocks may be a sign of a slowdown in the demand growth for hops (Financial Times, 2019). In terms of evaluating hops, producers rely on alpha and beta acid content, total oils and the hop storage index. A survey of Michigan brewers indicated that in terms of importance, 46 percent saw aroma as very important followed by 32 percent for flavor, 16 percent for analytics and 6 percent judge by color (Malone, 2019).

## References:

- Alfs, L. "Could locally grown barley boost Tennessee farms and breweries? Nashville Tennessean. July 3. <https://www.tennessean.com/story/money/2019/07/03/could-locally-grown-barley-boost-tennessee-farms-and-breweries/1320511001/>
- Best, S. 2019. "Estimating Production of Brewery and Distillery Spent Grains in Tennessee and Identifying Sustainable Uses." Unpublished Masters' Thesis, University of Tennessee, Department of Agriculture & Resource Economics.
- Brewers Association. 2019. National Beer Sales & Production Data. <https://www.brewersassociation.org/statistics-and-data/national-beer-stats/>
- Dick, J, K. and G. Bresowar. 2018. Using Phototherapy to Delay Flowering and Increase Vegetative Growth in Hops. Poster Presentation Southeast Hops Conference, Blacksburg, VA.
- Miller, S., R. Serrine, A. McFarland, P. Howard, T. Malone. 2019. "Beer as a Means of Economic Development: An Economic Impact Analysis of the Michigan Value Chain." Michigan State University Extension. Available as a PDF at <https://www.canr.msu.edu/resources/beer-as-a-means-of-economic-development-an-economic-impact-analysis-of-the-michigan-value-chain>
- USA Hop Growers of America. 2019b. USAHops 2018 Statistical Report. Yakima, WA. January.
- Financial Times. 2019. "US craft beer slowdown sends hops market from boom to bust." April 23. <https://www.ft.com/content/0f678bd6-0cc7-11e8-839d-41ca06376bf2>
- Qu, L. and J.M. Davis. 2019. Growing Hops for the Southeastern US. Poster at Southeast Hops Conference, Asheville, NC.



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