

Hops Marketing Opportunities In Tennessee

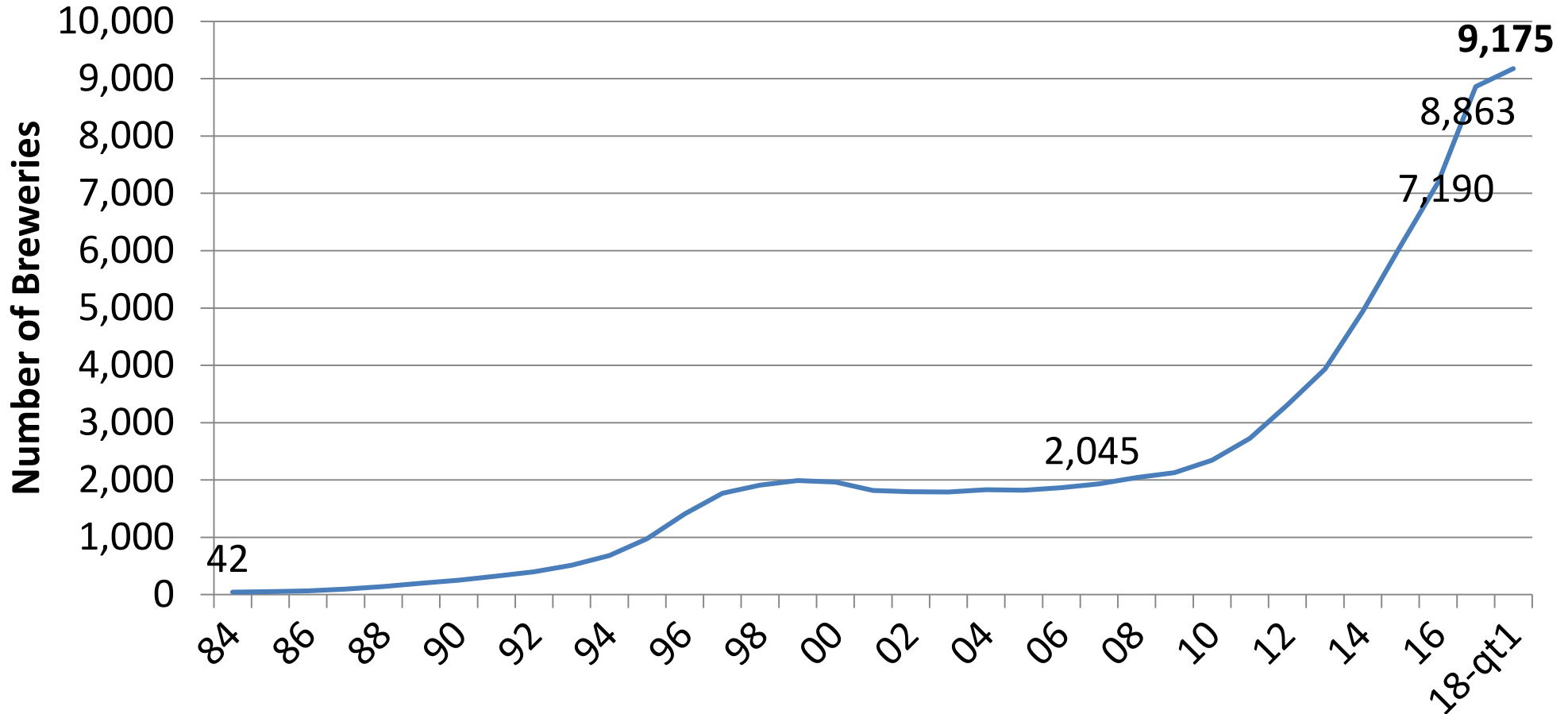
S. Aaron Smith and David Hughes
Assistant Professor and Professor,
Department of Agricultural & Resource Economics
University of Tennessee Institute of Agriculture
aaron.smith@utk.edu

Overview

- Craft Brewing Industry
- Tennessee Hop Market
- Obstacles and Opportunities
- Revenue and Cost of Production
- Companion Industries

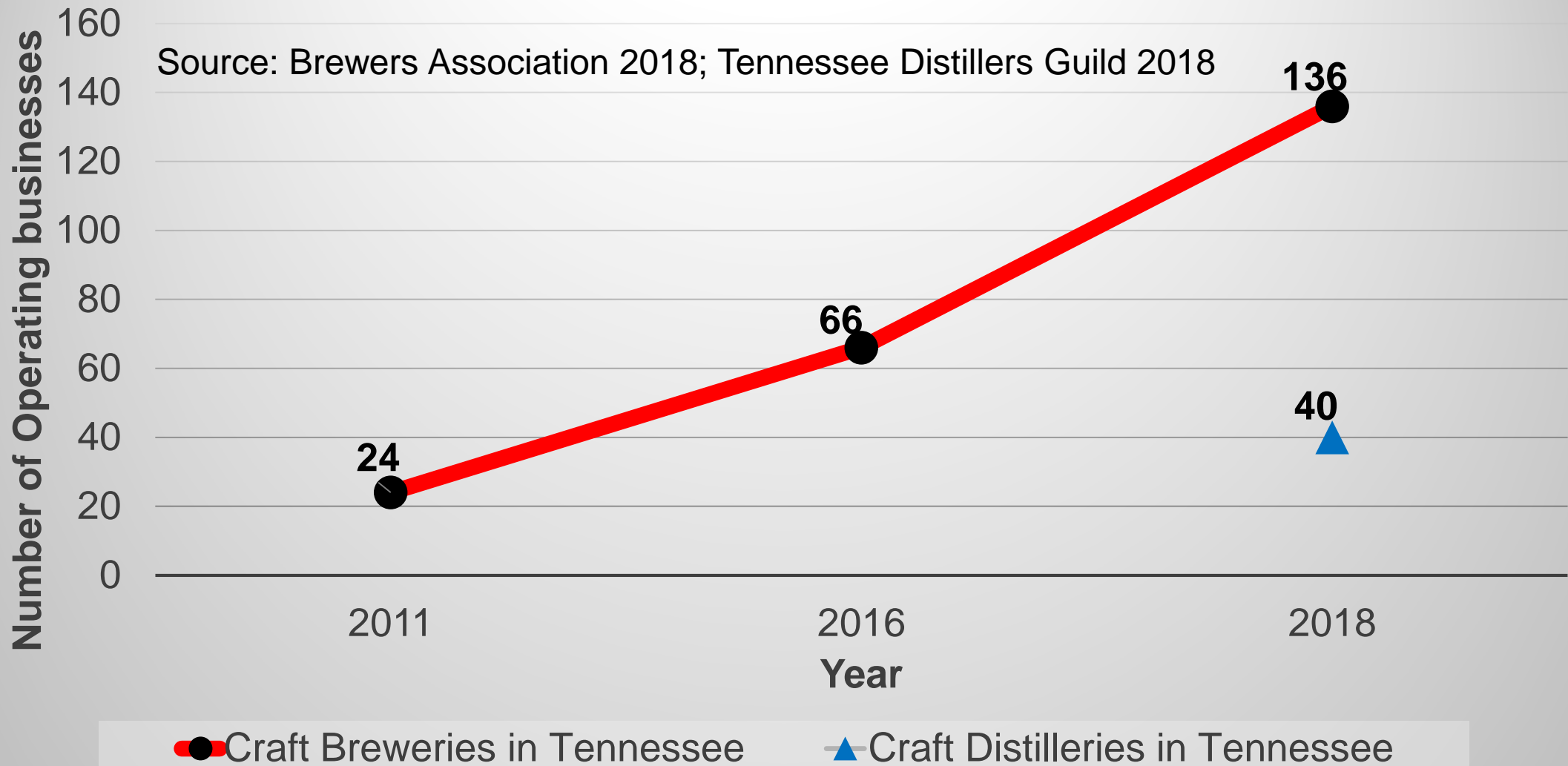


Growth in Number of US Breweries

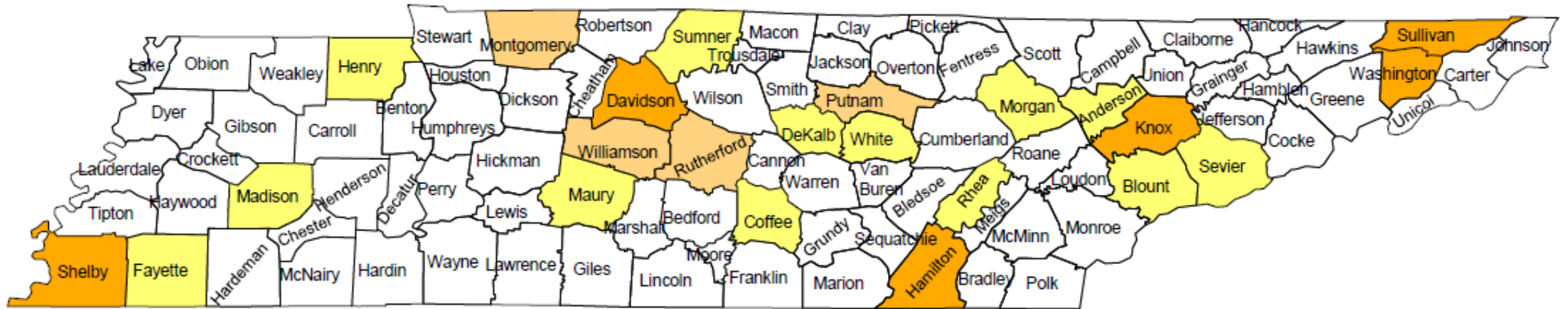


Craft Breweries and Distilleries in Tennessee, 2011-2018

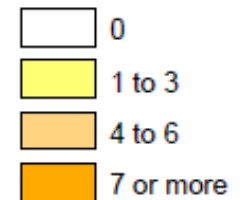
Source: Brewers Association 2018; Tennessee Distillers Guild 2018



Map of Tennessee Craft Breweries



Number of Breweries in County



Tennessee Hop Market

- Large Brewers
- 136 Craft Breweries in Tennessee (open and planned)
 - Regional (Yee-Haw, Yazoo)
 - Micro (Wiseacre, Fat Bottom)
 - Brewpub (Smokey Mountain Brewery, Balter Beerworks)
- Home brewing industry??
 - Size, needs, price premiums, etc.
 - On-line sales?

Marketing Obstacles for Hops in Tennessee

- Yield / Variety / Consistent Supply
 - Lack of region specific production data and information
 - The industry needs regional variety/research trails
- Quantity produced
 - Require enough to brew a product line or seasonal batches
 - Connecting breweries with producers
 - Could a cooperative or an integrated supply chain be viable?
 - Production contracts (risk sharing between producers and breweries)
- Harvesting, drying, and pelletizing
 - Labor intensive
 - Substantial fixed costs for small scale production

Marketing Opportunities for Hops in Tennessee

- Local foods / local brewery movement
 - Willingness to pay for locally produced?
 - Willingness to pay for locally sourced and produced?
- Regional product identification
 - Beers of Tennessee
- Agri-tourism – farm-to-glass

Hops Revenue

- Yields / Variety
 - PNW: 2,000 lbs/acre; Other states: 750 lbs/acre
- Prices dried, 8-10% moisture
 - 2017 US average: \$5.96 per pound
 - \$12-\$14 per pound reported (highly variable; regional WTP?)
- 2,000 lbs/acre x \$5.96 lb = \$11,920/acre
- 750 lbs/acre x \$13 lb = \$9,750/acre

Hops Cost of Production

- Huge variations in establishment and annual costs
- Lack of automation (economies of size) results in much higher production and labor costs per acre than the Pacific Northwest
- Fixed
 - Trellis system
 - Land (site selection)
 - Machinery (farm & processing)
 - Establishment (rhizomes, labor)
- Variable
 - Annual Inputs (fertilizer, chemical, maintenance, repairs etc.)
 - Labor (pruning, harvesting, and processing)
 - Processing (operating costs for drying and pelletizing)
 - Storage (dry/pelletized)
 - Transportation (to breweries)

Production Costs

	Average	Low	High
Establishment Costs (annualized): \$/acre	\$3,205	\$1,409	\$6,484
Annual Costs: \$/acre	\$11,257	\$8,350	\$15,505
Total Cost: \$/acre	\$14,462	\$9,759	\$21,989

- Establishment Costs = \$8,000-\$36,000 per acre
- Annual Costs = \$8,350-\$15,500 per acre
- Average of production costs by four other land grants

Can You Make Money?

Break Even Yield (dry)

Price (\$/lb)	Break Even Yield (dry)			
	Avg. Cost	Low Cost	High Cost	
\$7	2,066	1,394	3,141	
\$8	1,808	1,220	2,749	
\$9	1,607	1,084	2,443	
\$10	1,446	976	2,199	
\$11	1,315	887	1,999	
\$12	1,205	813	1,832	
\$13	1,112	751	1,691	
\$14	1,033	697	1,571	
\$15	964	651	1,466	
\$16	904	610	1,374	
\$17	851	574	1,293	
\$18	803	542	1,222	
\$19	761	514	1,157	

Break Even Price (\$/lb)

Yield (lbs/acre)	Break Even Price (\$/lb)			
	Avg. Cost	Low Cost	High Cost	
750	\$19.28	\$13.01	\$29.32	
800	\$18.08	\$12.20	\$27.49	
850	\$17.01	\$11.48	\$25.87	
900	\$16.07	\$10.84	\$24.43	
950	\$15.22	\$10.27	\$23.15	
1,000	\$14.46	\$9.76	\$21.99	
1,050	\$13.77	\$9.29	\$20.94	
1,100	\$13.15	\$8.87	\$19.99	
1,150	\$12.58	\$8.49	\$19.12	
1,200	\$12.05	\$8.13	\$18.32	
1,250	\$11.57	\$7.81	\$17.59	
1,300	\$11.12	\$7.51	\$16.91	
1,350	\$10.71	\$7.23	\$16.29	

Craft Brewery Marketing Q's

- Wet or dried (is so what form?)
- Pricing
- Delivery dates
- Contracting
- Brewing schedule driven by equipment use and market needs
- Product consistency/characteristics: provide Alpha/Beta, oil content, moisture, storing index testing info



Barley, Malting, and Flavor Additives

COMPANION INDUSTRIES

Real. Life. Solutions.

UFEXTENSION
INSTITUTE OF AGRICULTURE
THE UNIVERSITY OF TENNESSEE

Barley Production

- Less than 2,500 acres reported (malting and non-malting varieties)
- Does malting varieties matter to the Craft Brewer?
- Malting quality versus alternative use (animal feed)
- Over coming price premiums for malt versus animal feed
 - Contracting?
- Availability of Malting Houses / Local Malting Demand

Malting Houses

Process

- Steeping
- Germination
- Drying & Kilning
- Cleaning

Availability in Tennessee

- Riverbend Malt House – Asheville, NC
- Interest in multiple locations in Tennessee
 - Memphis
 - Haywood County
 - Nashville
 - Robertson, County

RIVERBEND MALT HOUSE
20 NORTH CAROLINA 10

ABOUT US PROCESS MALTS WHAT'S NEW LOCAL FLAVOR KILN BLOG

LOCALLY FARMED, ARTISAN MALTS

SO WHO IS RIVERBEND?
Riverbend Malt House pledges to provide the area's craft brewers locally farmed, artisan malts that bring depth and character to your passion, while greatly lessening our impact on the earth.

TAKE A TOUR
Interested in taking a tour of the malt house? We love showing people around! If you are a professional brewer or distiller please contact us to set up a time. Please email or call us to reserve your space.

HOMEBREWER FAQ
Homebrewing helped launch our business and we work hard to maintain our connection to this vibrant community. Click here to learn more about our products.

Flavor Additives

- Fruit additives: lemon, lime, orange, tangerine, grapefruit, paw paw.....
- Spice additives: ginger root, cinnamon, licorice....
- Other additives: hemp, vanilla, rose hip, cocoa, coffee....
- Radler: mixture of beer and fruit juice/soda, or lemonade



Questions and Discussion

Contact: aaron.smith@utk.edu and dhughe17@utk.edu

THANK YOU



Real. Life. Solutions.

UT EXTENSION
INSTITUTE OF AGRICULTURE
THE UNIVERSITY OF TENNESSEE