American Hop Convention State of the Industry

Merchant Panel

Portland, OR - January 24, 2020

Topics

The Changing Landscape of the Beer Industry

The Response from the Hop Industry (World & US)

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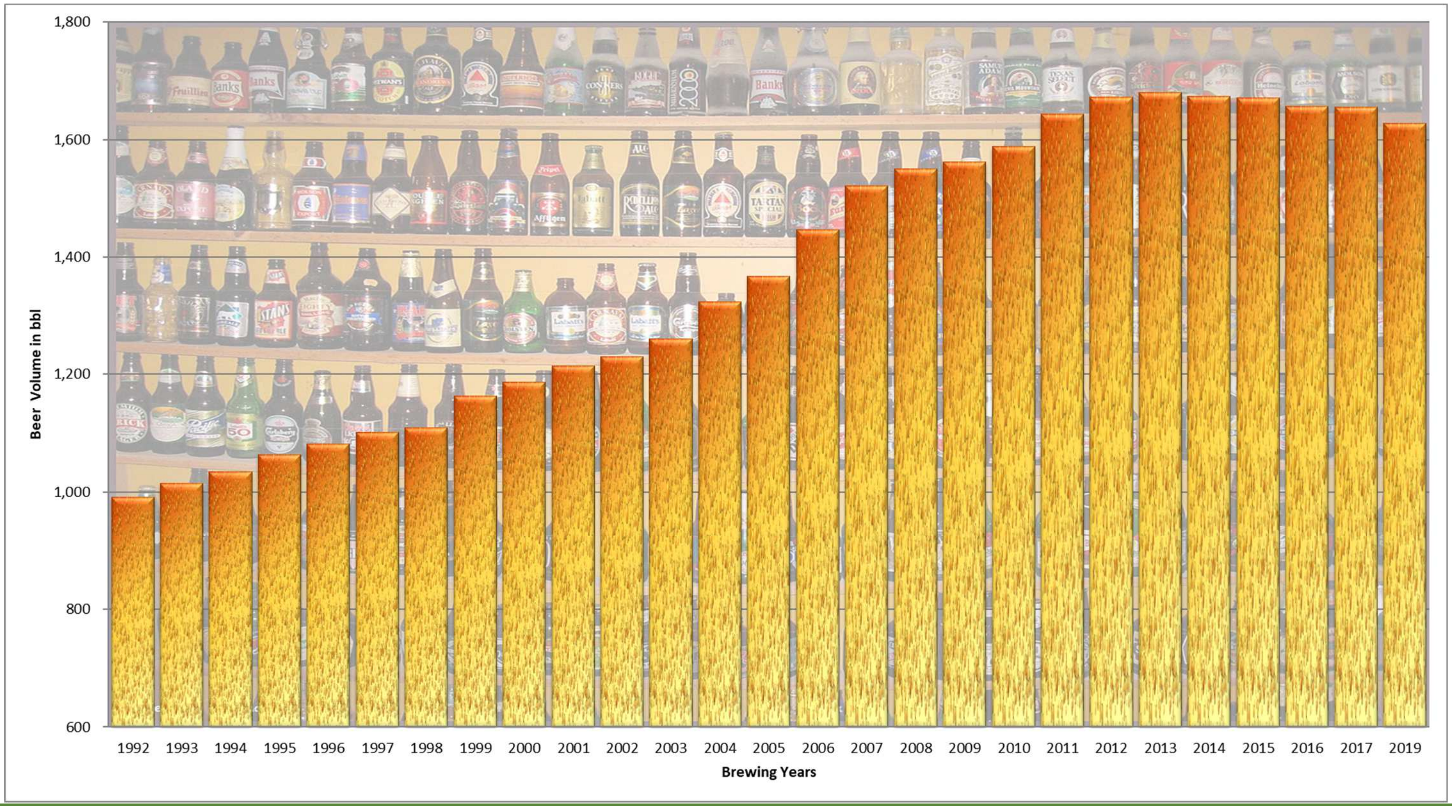
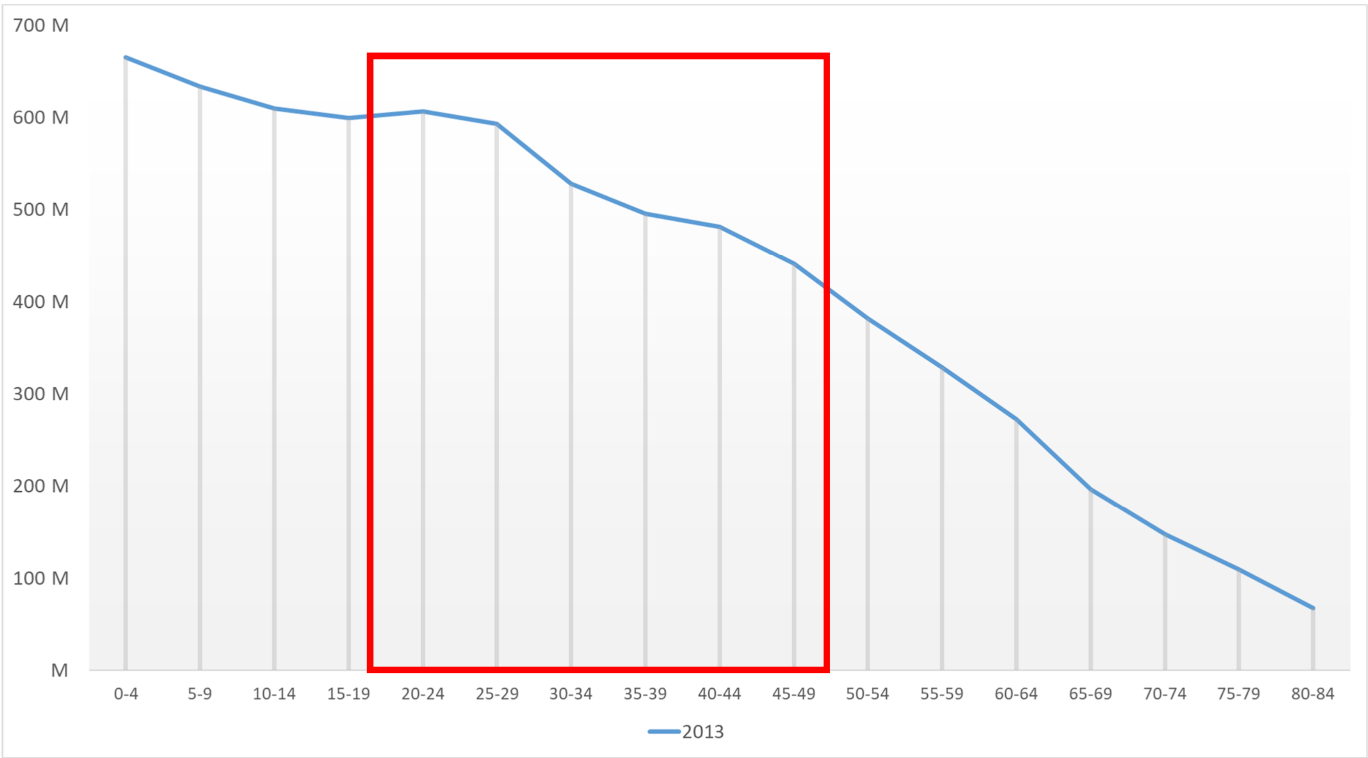
World Beer Production (in BBL)



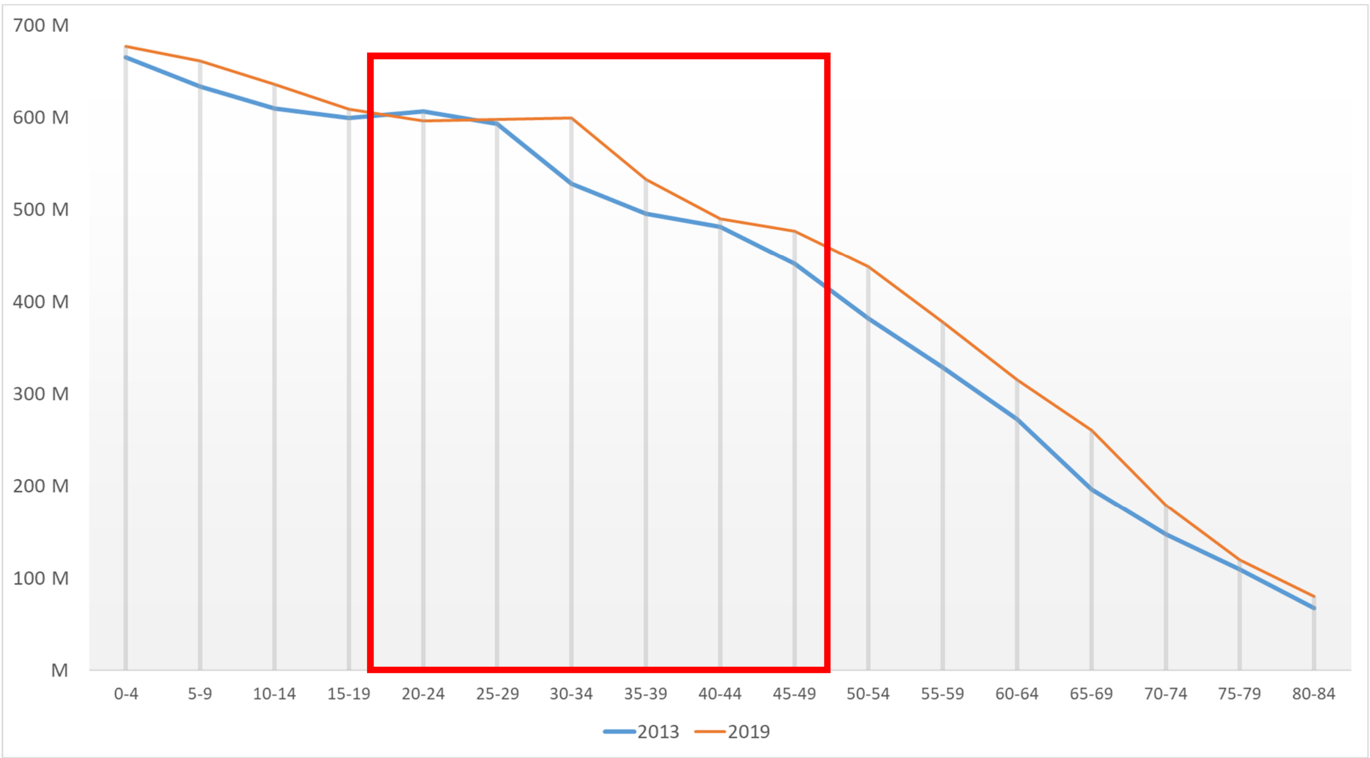
- Beer Production peaked in 2013
- Steady declines since…
- …with hope that 2020 will see stabilization
- worldwide decline in popularity or preference

World Population Trends - 2013



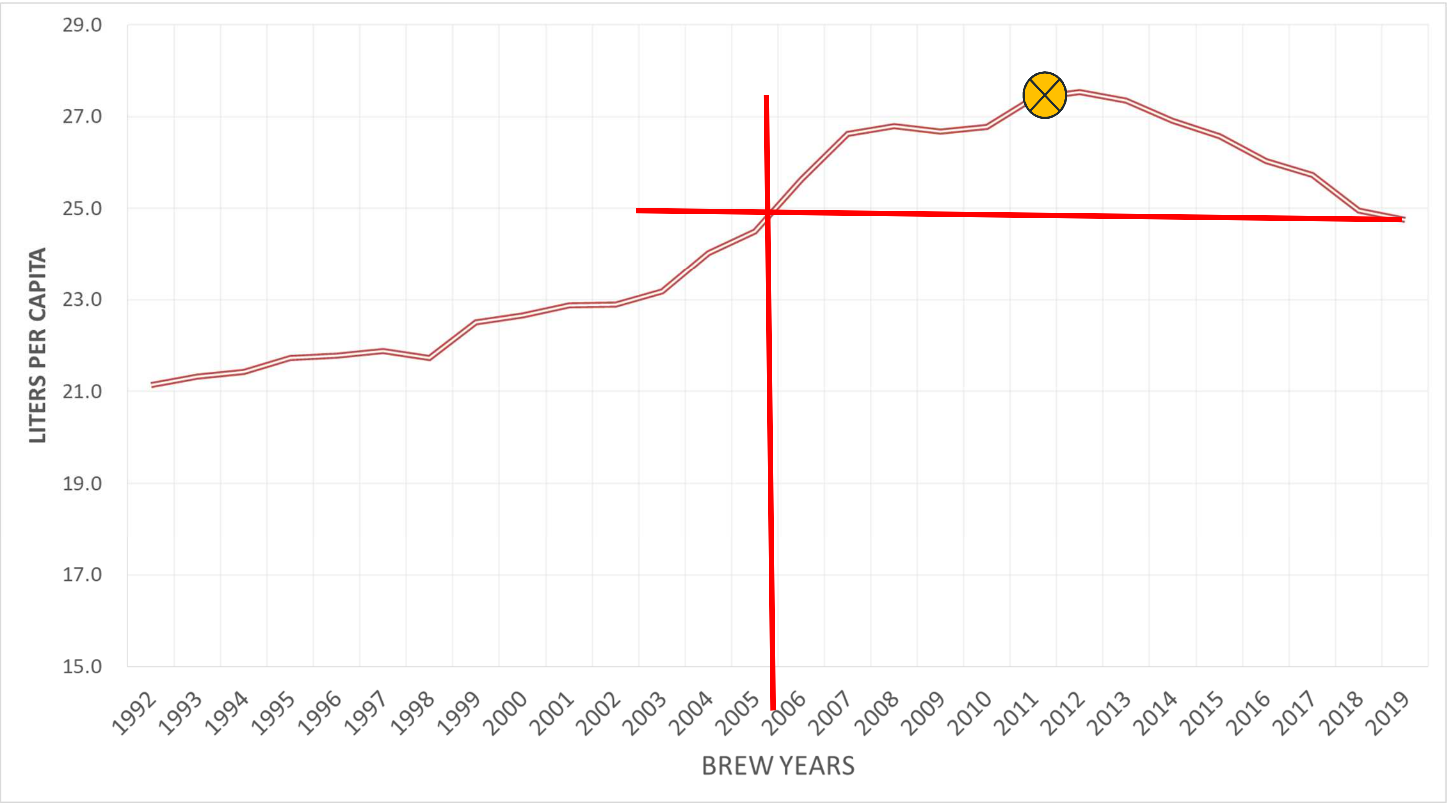
- Population per age cohort worldwide
- 2013 – 7.2 Billion

World Population Trends - 2013 & 2019



- Population per age cohort worldwide
- 2013 – 7.2 Billion
- 2019 – 7.9 Billion, or +500 M
- Prime beer drinking cohort (20 to 50) +150 M
- Enough drinkers!

World Beer Consumption per Capita (in Liters)

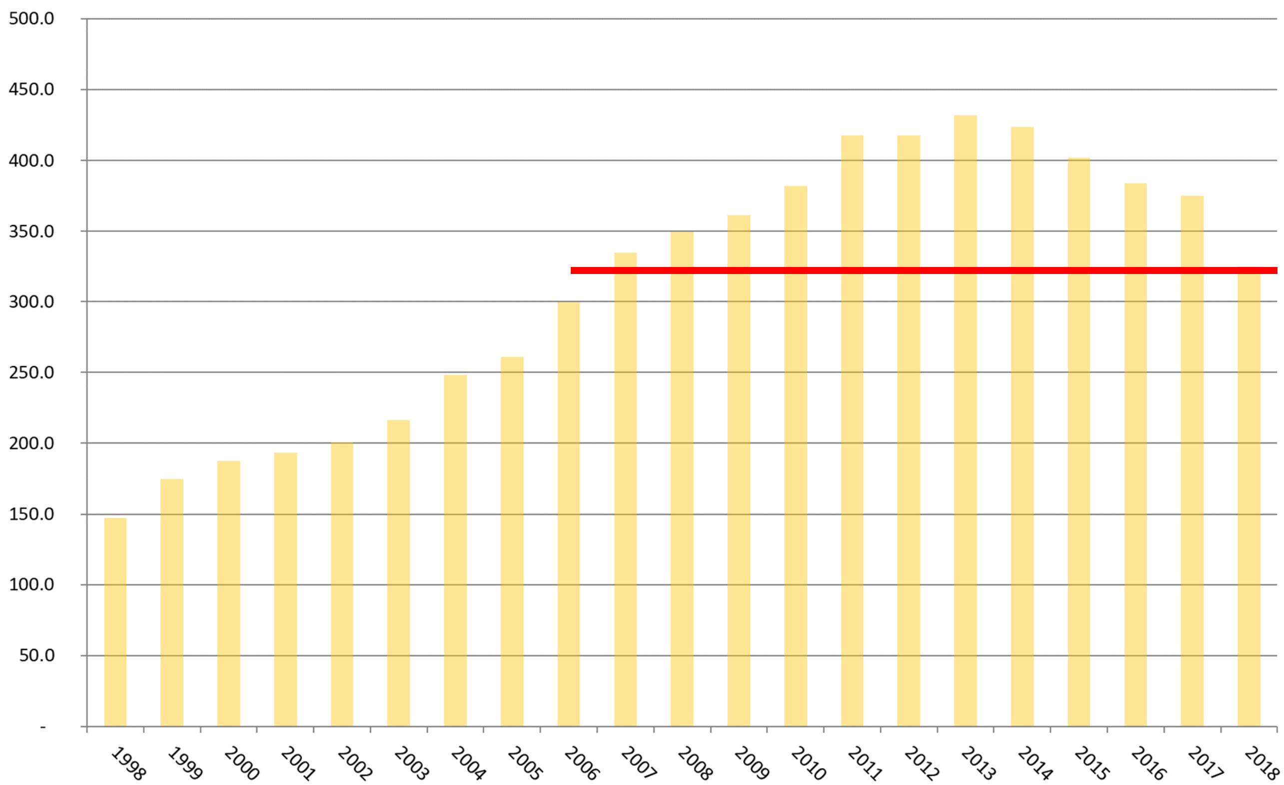


- Beer consumption per person worldwide
- 2012 – 27.7 Liters
- 2019 – 24.8 Liters, about the same as was consumed in 2006

Main Beer Producers - Development

Rank	Country/Region	2018 BBL	Comment for 2019
1	European Union	341,792	flat-ish
2	China	324,868	stabilizing
3	United States	182,895	declining (about -1%)
4	Brazil	120,487	stable
5	Mexico	102,096	increasing (US export)
	Subtotal	1,072,138	
	Share of total	66%	

Focus on China – Beer Volume (1998 – 2018)



- 2013 – peak beer at 432 million bbl
- 2018 – decline to 325 million bbl
- 2018 = 2006/7, one decade of beer consumption lost, about 100 million from peak (equal to output from Mexico)

China’s Beer Story

- After 5 years of steep declines, 2019 looking to have stabilized
- Today’s volumes represent “private” consumption, i.e. no event drinking on the account of the government
- Change in beer styles & adjustment to recipes increase “light beers” from 8% Plato to 10%, higher value to consumer
- Many beers now all malt – courtesy of increased rice costs
- Premium beers with imported hops gaining traction as do craft beers with many craft breweries sprouting up. ***Premiumization!***
- But, the local hop industry is in decline (7,000 MT↓)

Global Brewer Response to Declining Sales

All global and national/regional brewers pursue various ***premiumization*** strategies:

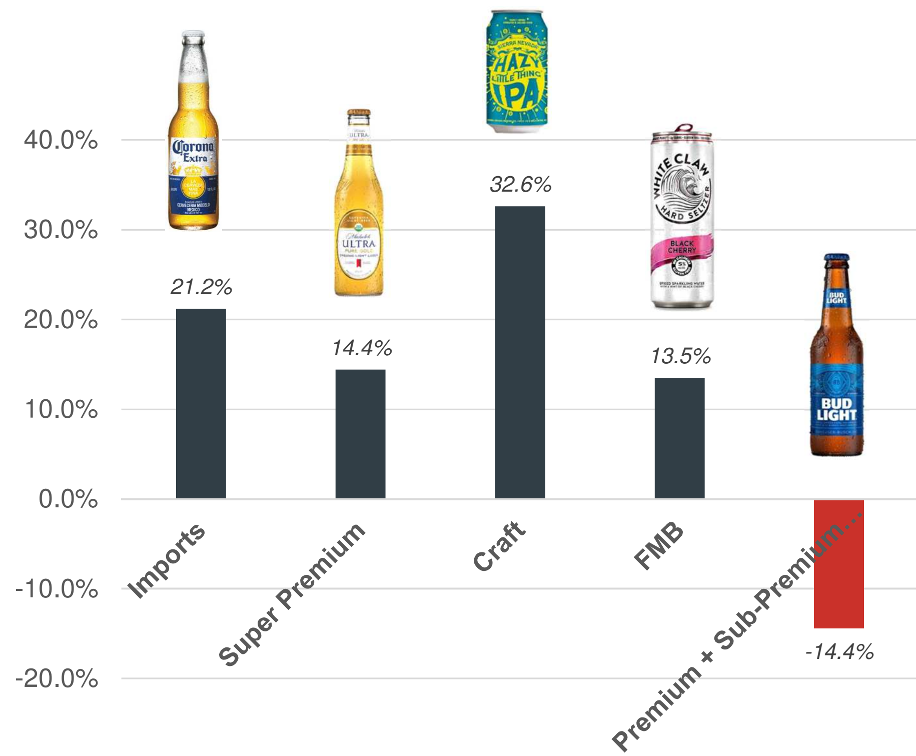
Introductions of:
- Specialty beers
- Low or no alcohol beers
- More body (more malt)
- Craft or flavor forward

US Beer Trends – 5 Year Average 2014 - 2018

Within the perpetually declining US beer production (bbl), there are a surprising number of segments growing:

Current growth areas:

- Better For You
- Flavor(ful)
- Convenient
- Experiential / Authentic



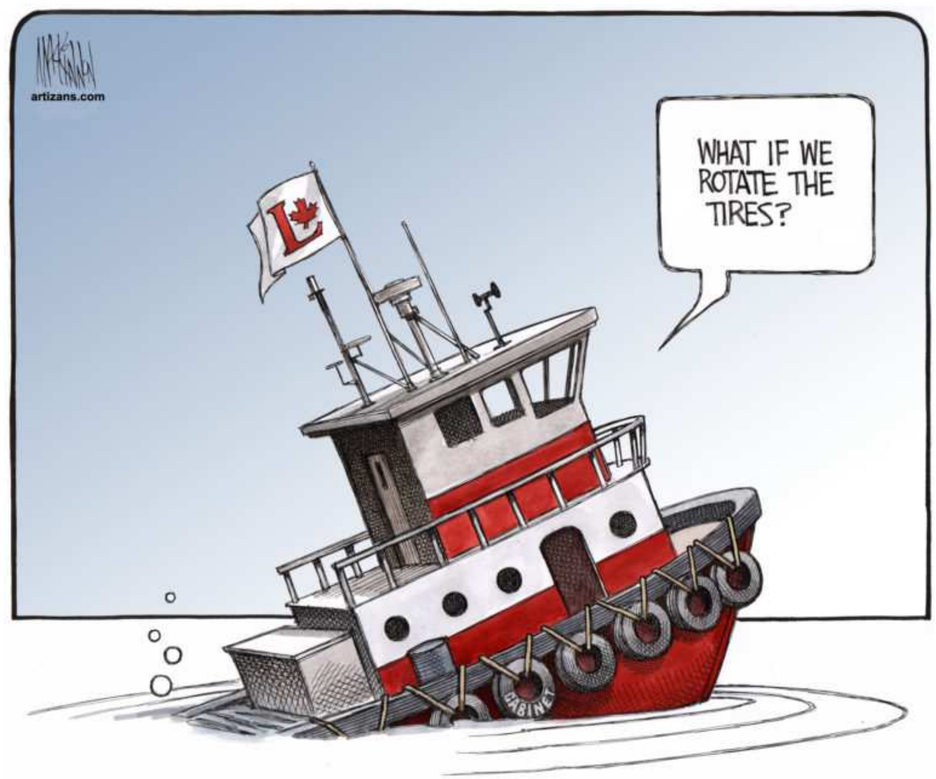
US – The Lager Beer Dilemma

If your (US lager) boat's sinking,

you can either:

- try to plug the leaks, *or*
- find another boat…

- …Hard Seltzer is the other Boat



US – The Lager Beer Dilemma

Boat

This is Beer…

...and this is beer:

FMB's, incl. Hard Seltzers are 10% of total "Beer" consumed in the US

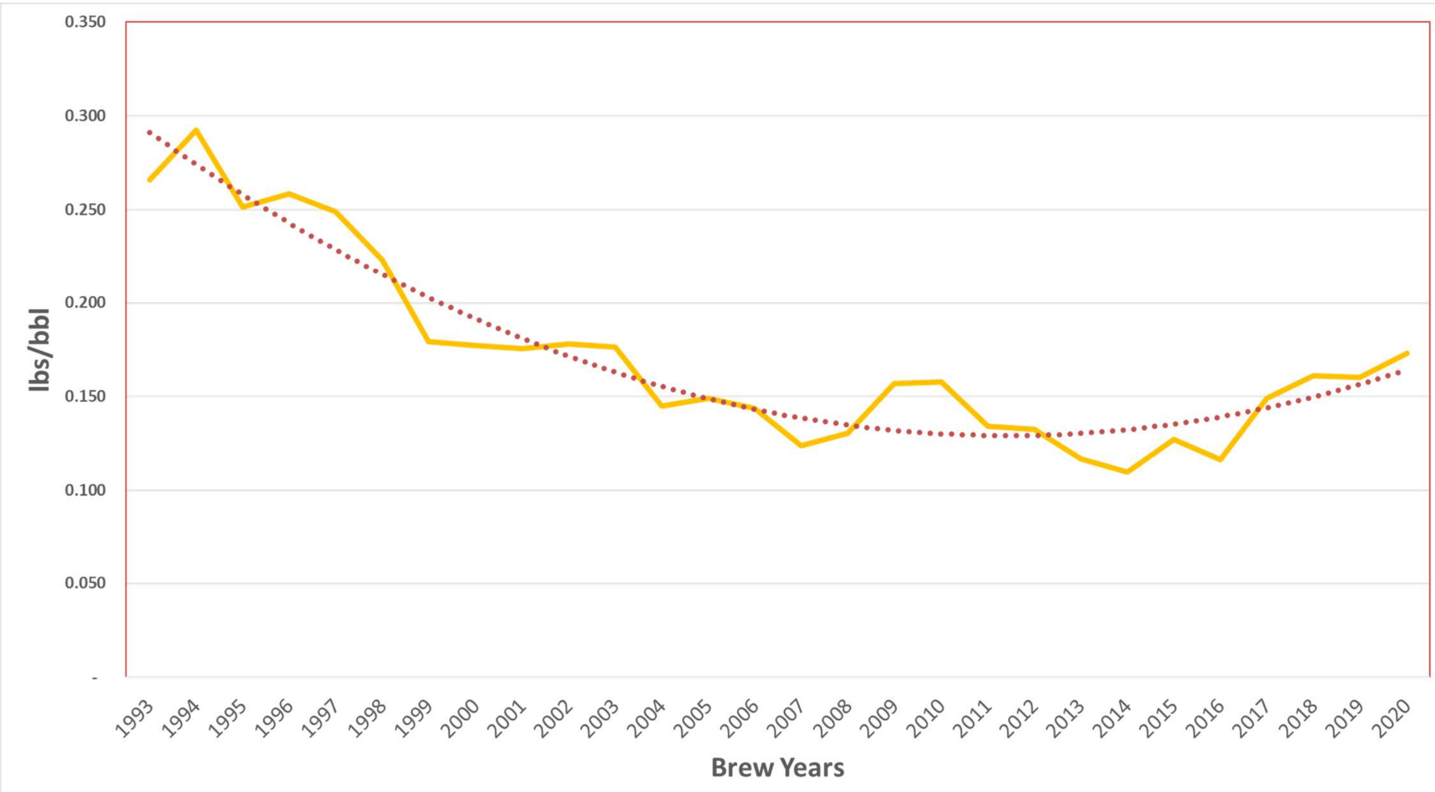
Stretching the Definitional Boundaries…

The Beer Industry's Desperate Scramble

What new **beers** or **brewery products** are going to stick with consumers tomorrow?

What role will the Hop Industry play to help in this quest?

World Hop Production vs World Beer Volumes



- Nearly 3 decades look at "hops" vs "beer volume" relationship
- Early 1990's, hopping rate 0.25 lbs/bbl
- Early 2010's, >0.15 lbs/bbl
- Now, trend moving up again

Significant Figures

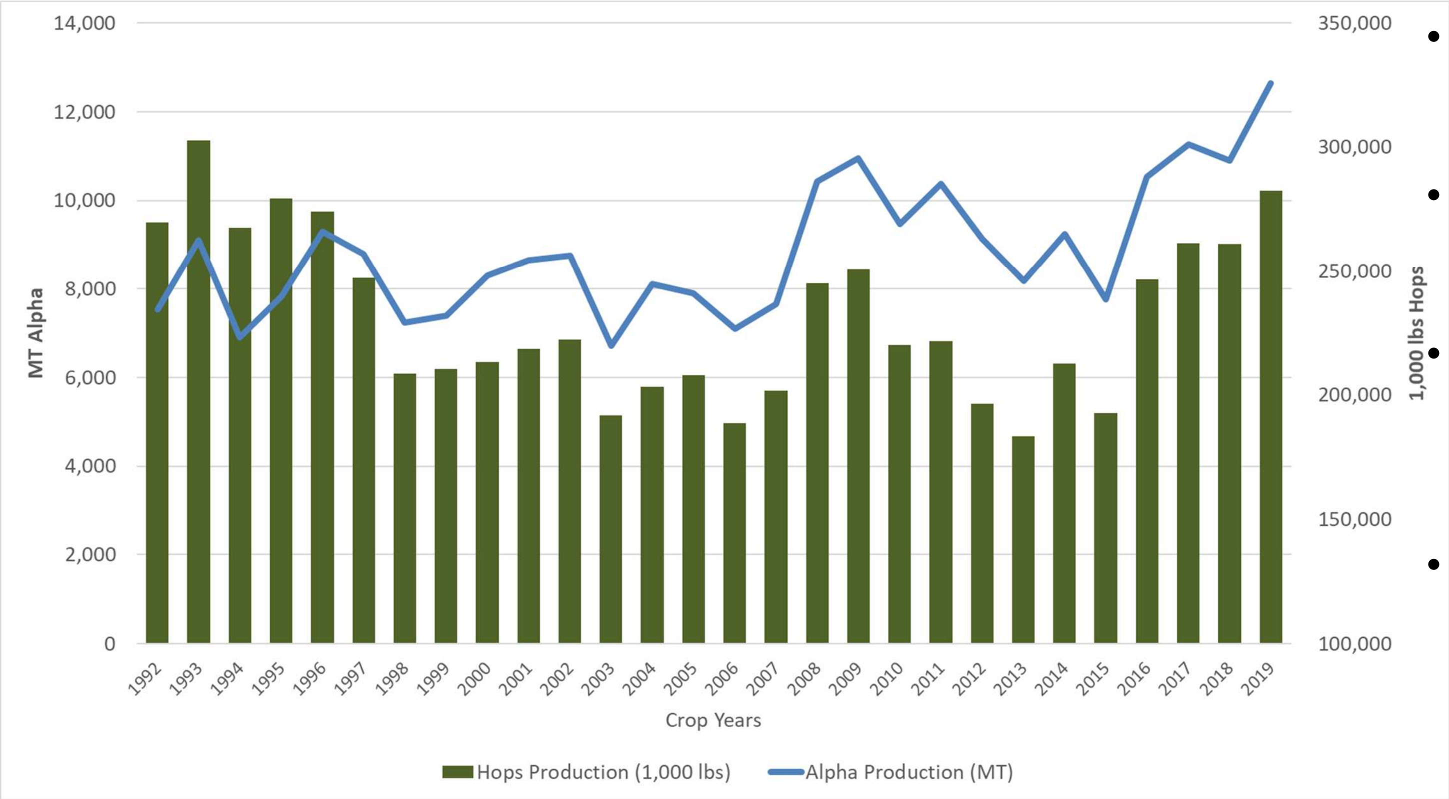
- Hopping rates in Craft ranges from 1.0 to 3.0 lbs/bbl (Hazy IPA's up to 6 or more)
- World beer hopping rates in last 5 years increased from 0.13 to 0.16 lbs/bbl – a mere 0.03 lbs/bbl! Is this a rounding error?
- This "rounding error", however, equates to 50 million lbs of more hops consumed in an essentially stagnant/decline beer market
- 0.03 = 23% increase

Topics

The Changing Landscape of the Beer Industry

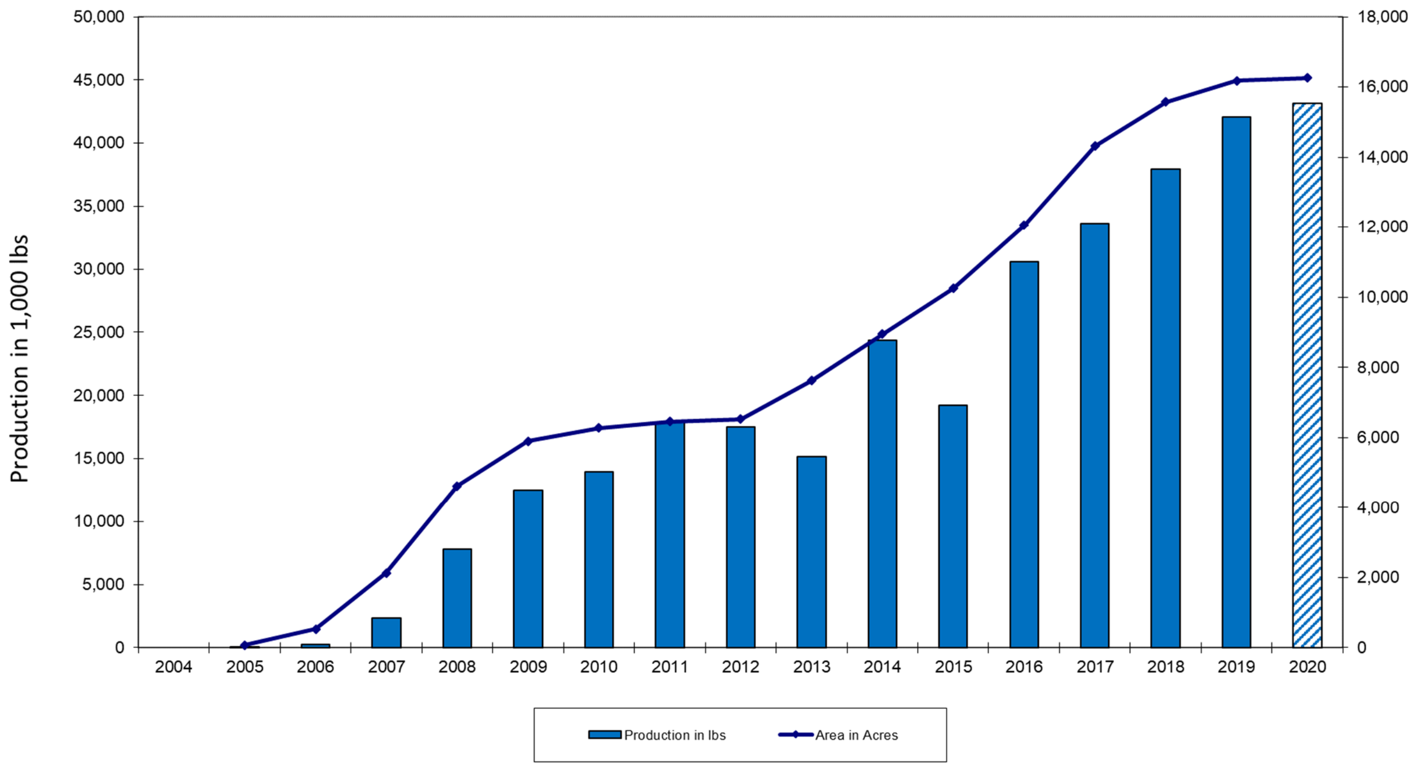
The Response from the Hop Industry (World & US)

World Hop & Alpha Production (1992 – 2019)



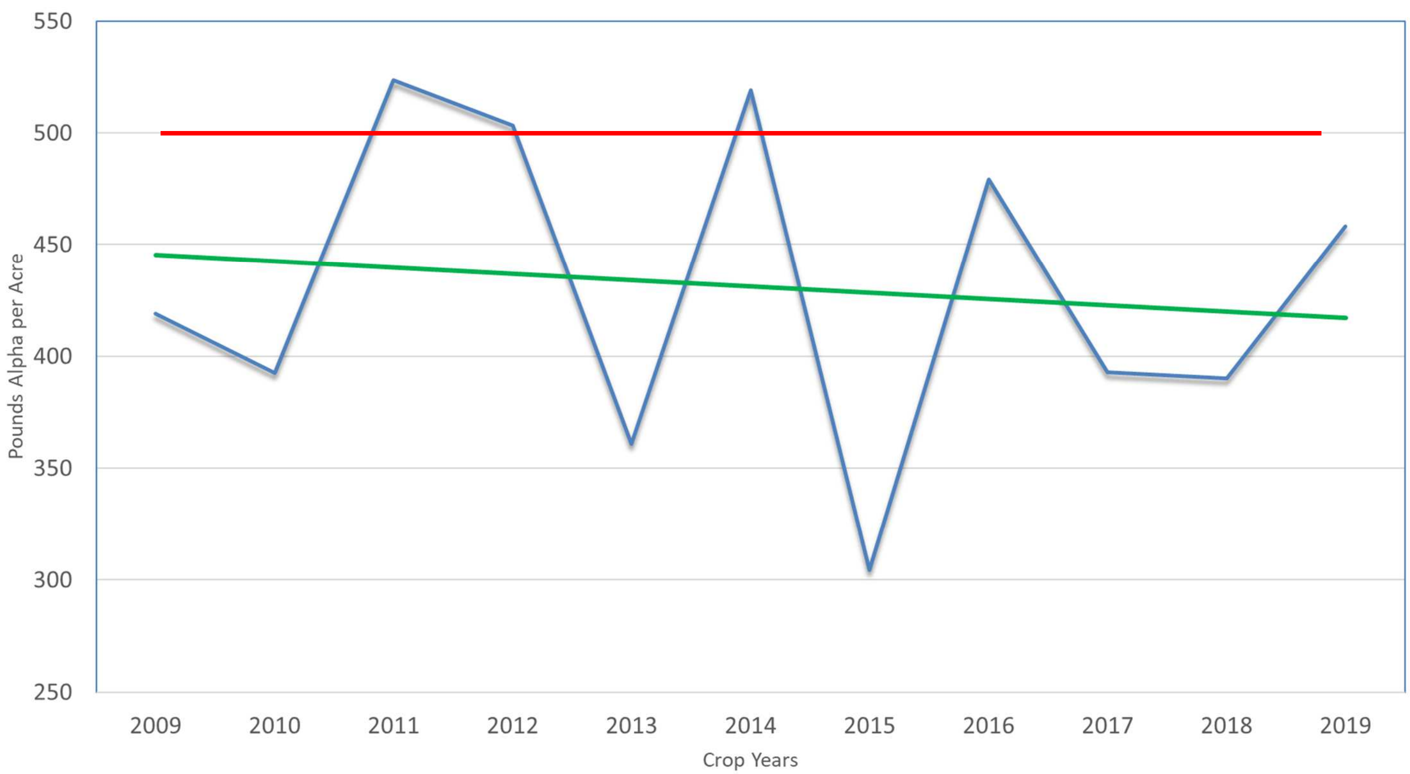
- 2019 – 282 million lbs, similar than in 1995
- ~ 100 million lbs more than in 2013
- 2019 – 12,600 MT alpha, the highest ever, surpassing 2009
-

Growth & Importance of Herkules for Germany



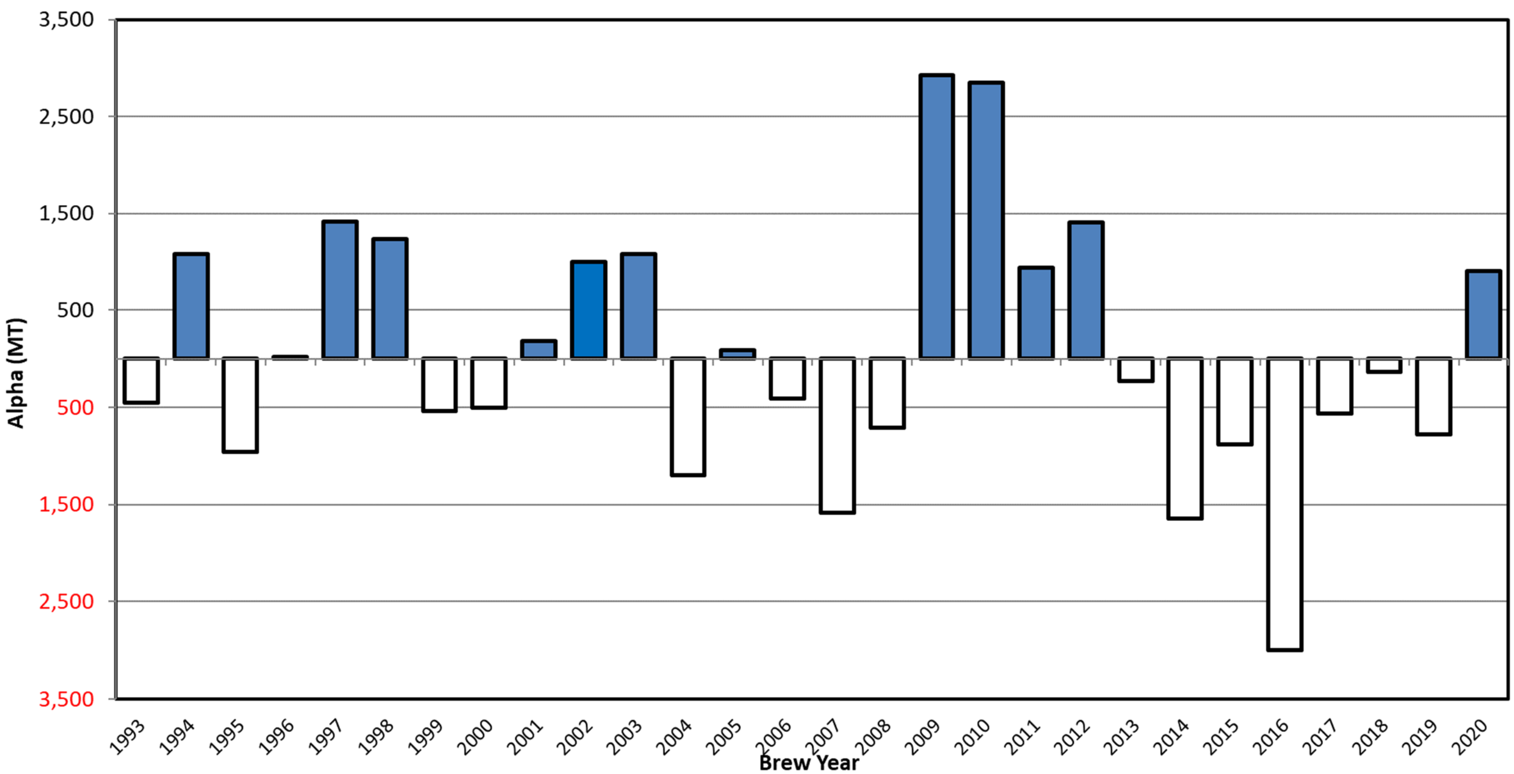
- 2019 HKS produced 42 million lbs on 16,200 acres
- HKS equates to 32% of German acreage,
- 39% of hop production, and
- 59% of total alpha production with nearly 3,000 MT alpha

Performance of Herkules & Other Varieties



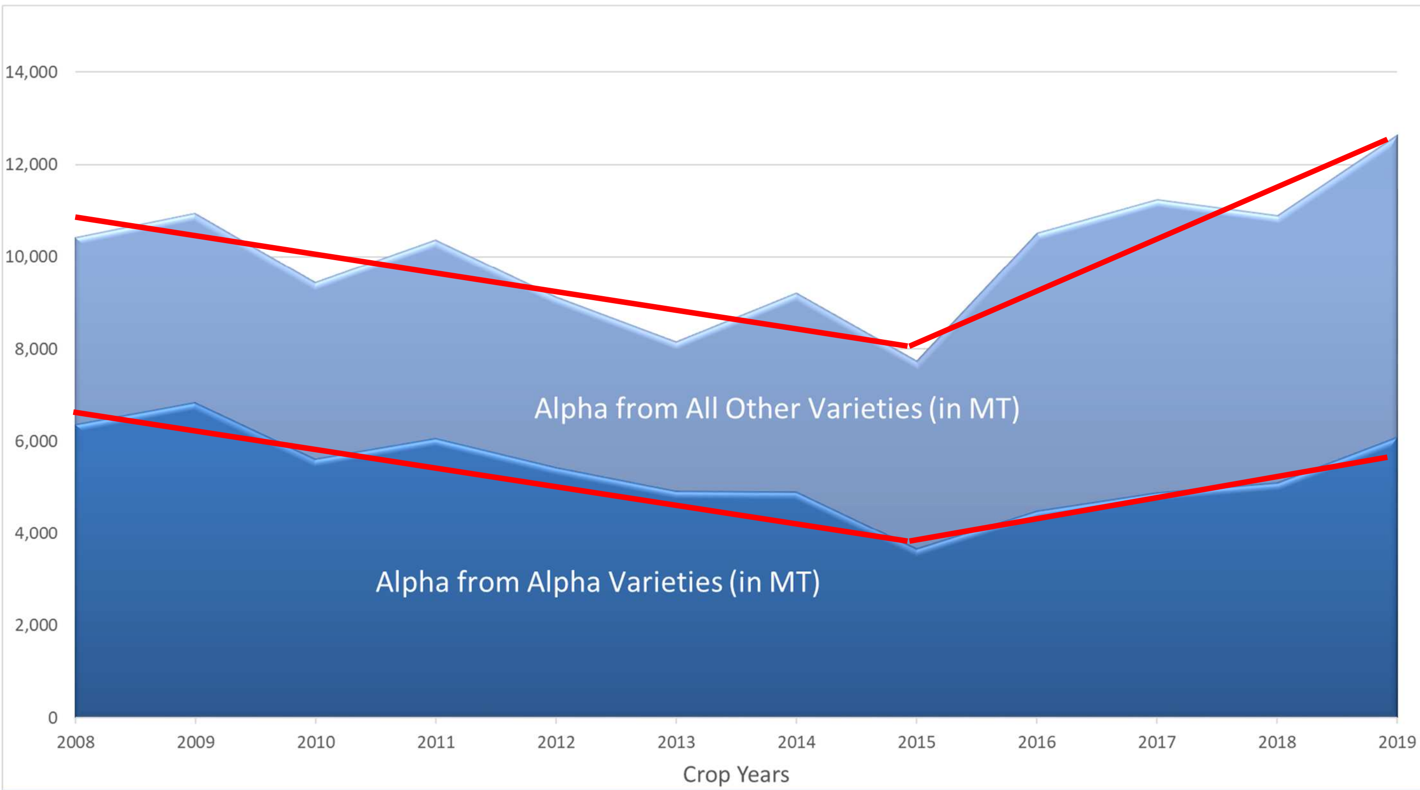
- Average lbα / A declined from 450 to around 420
- Expectation was closer to 500 lbα / A
- Performance decline evident in most varieties with 5-year average alpha significantly lower than 10-year average

The World Alpha Balance – All Hops (in MT Alpha)



- Measuring all hops and all consumption in alpha
- Not an exact science, different calculation exists
- 2019 crop first positive balance in 7 years
- Inventory rebuilding across varieties

Alpha vs Aroma/Flavor Varieties in MT Alpha

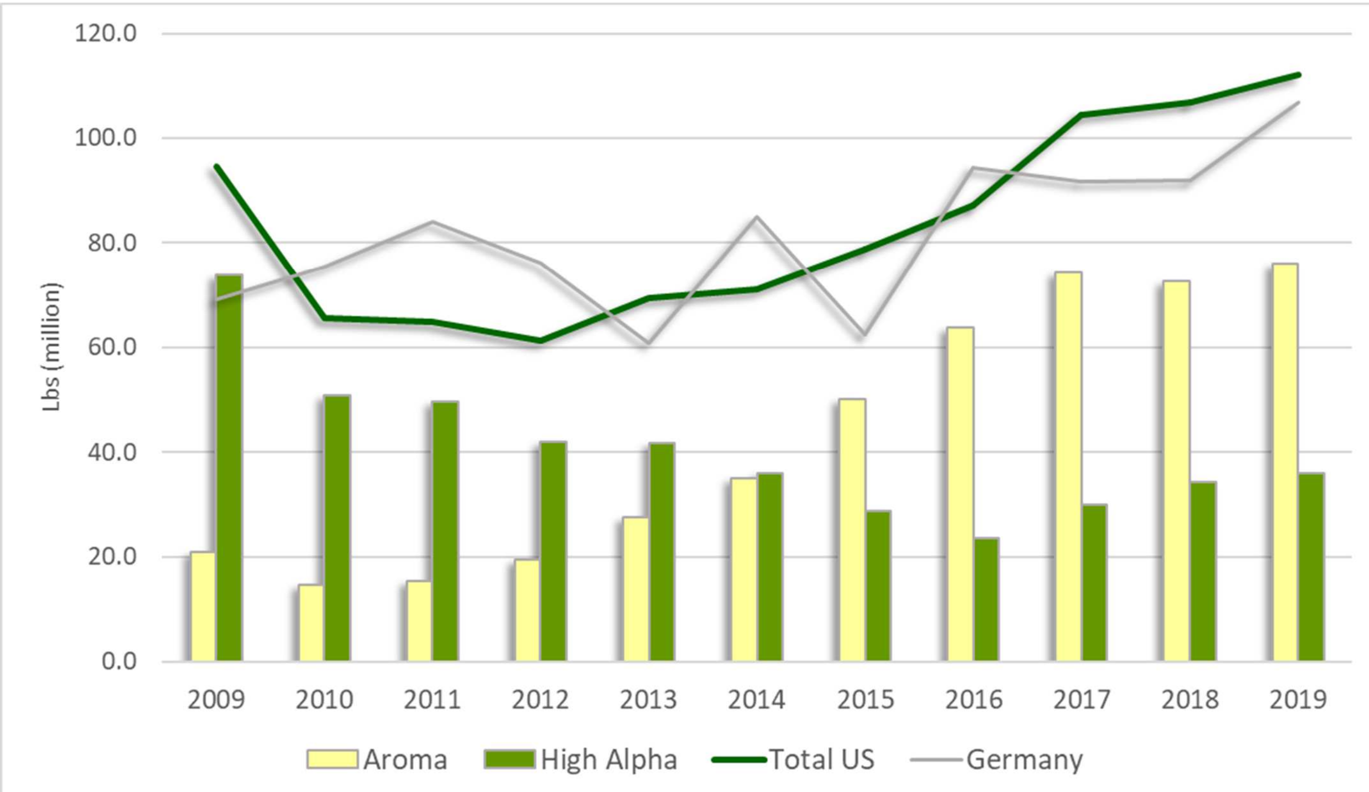


- Measuring all hops in alpha but segmented in alpha and aroma/flavor
- Alpha production rebuilding, after years of declines
- Aroma/Flavor production increasing faster, some varietal imbalances

The Alpha Market

- The only remaining segment in the hop market that is not regionalized, but world production driven
- Cost of production in Germany still lower as is the willingness to sell lower prices than in the US
- Therefore, alpha shift continues toward Germany, albeit slower due to variable performance of Herkules and difficulty to predict its yield and alpha content
- Demand for alpha driven by the world lager beer category… and it is not the beer style growth category
- Remember though – 97% of world beer is not craft…

US & German Crops (2009 – 2019)



- Both US and Germany above 100 million lbs, combined make up 78% of world production
- US alpha stable, aroma/flavor continuing to increase with 76 million lbs about equal to 2015 total crop
- ~60 million lbs more aroma than in 2010

US – Driving Variety Diversity & Premiumization

- Th past decade saw numerous new variety releases from breeding programs, both private and government sponsored. A selection of names (not inclusive):

Bru-1™, Calypso™, Cashmere, Citra®, El Dorado®, Ekuanot®, Eureka!™ Idaho 7, Lemondrop™, Meridian, Mosaic®, Pekko™, Sabro™, Strata, Sultana™, Tahoma, Triple Perle, Yakima Gold

- Today, these account for 40 million pounds (both alpha and aroma), or 36% of total production
- Comparatively, Germany's new introductions make up 6 million pounds or 5% of total production

Where do we go from here? Outlook 2020

- In the US, acreage expected to increase by +/-2,000 acres, with aroma increasing, alpha likely stable or slight decline.
- Germany overall acreage up perhaps by 250 – 500 acres, mostly coming from Herkules. (Remember, HKS continues to be the most lucrative variety for the grower).
- The Rest of the World expected to be mostly unchanged to slightly decline. (Crop 2019 ROW equaled to 22% of total production)

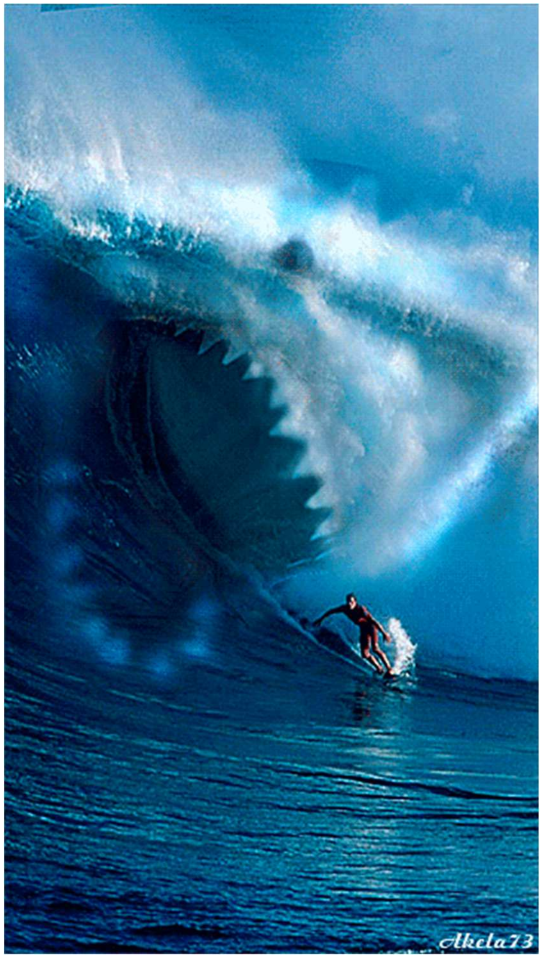
…And Beyond Crop 2020?

- Will the growth trajectory last? Can we add another 100 million pounds worldwide as we just have done, with 50 million pounds of increase in world demand? *(Some caution…)*
- Will beer trends be more towards:

or

…And Beyond Crop 2020?

- Beer will continue to evolve, stretching its definition how it's made and with what it's made.
- Could Hard Seltzer become an opportunity for hops – perhaps…
- ….but there are already a number of Flavor companies targeting the brewing industry – as beer no longer is narrowly defined
- So, just when you though it was safe to surf into the sunset…



…and now on to our panel – thank you