California Craft Brewers Association

Current Conditions
&
Future Considerations

Barley & Hops

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Barley

Current Conditions

Stocks

- Barley stored in all positions on March 1, 2014 totaled 121 million bushels, up 4.4 million bushels from March 1, 2013.
- The December 2013 - March 2014 disappearance is 47.9 million bushels which is 6.2 million bushels (15%) greater than the same period in the previous year.
- Based on 2013 US beer production volume, most of the consumption increase is likely due to craft increases.

Barley

Current Conditions

Prospective Seedings

- A good US crop in 2013 and record yields and selection rates in Canada could have contributed to lower expected seedings in the US in 2014.
- Producers intend to seed 3.17 million acres of barley for the 2014 crop year, down 9 percent from 2013.This will be the third smallest seeded area on record.
- Idaho will probably be the largest producer in 2104

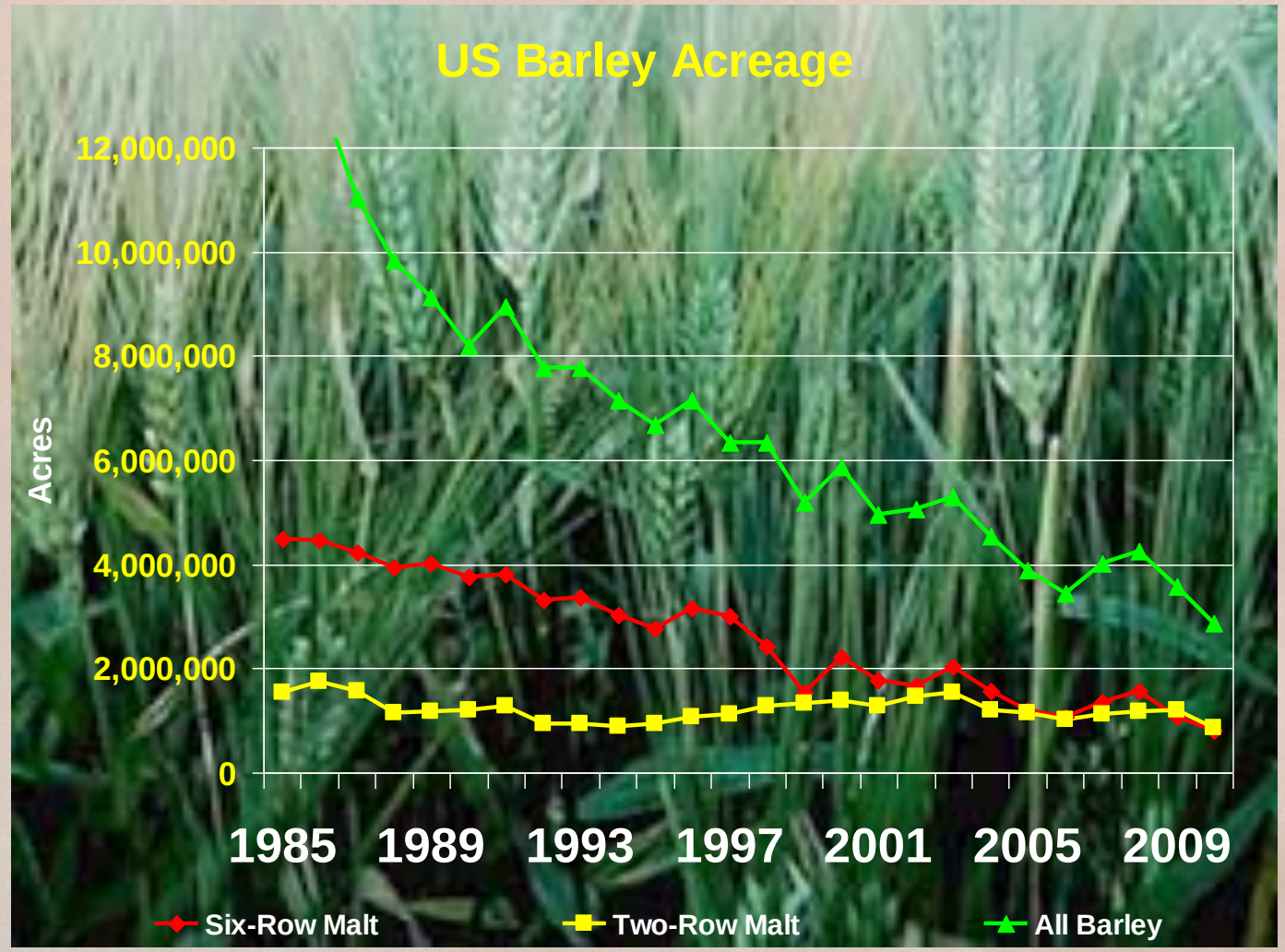
Barley

Future Considerations

- Barring any big change up or down in productivity, the acreage decrease will marginally offset the slightly increased stocks. That leaves **accelerating consumption as the key driver this year for likely changes in the supply demand curve.**
- If current craft growth continues, it appears likely that barley stocks will decrease significantly by next March.

Barley

Current Conditions



Barley

Future Outlook

- The proliferation and growth of all-malt craft beer brands has significant meaning to the malt industry.
- Higher original gravities of typical craft beer brands, along with typical all-malt grist composition and lower brewhouse extraction efficiencies means that craft beer malt consumption is disproportionately high compared to craft beer volume share.

Barley

Future Outlook

- In early 2014 craft beer volume accounted for roughly 7.8% of total beer volume in the U.S.; but **craft brewers consumed over 25% of the malt** used by all U.S. brewers.
- Based on current production ratios, if and when craft volume share reaches 10%, **craft brewers will consume 31.1% of all malt** used by U.S. brewers.

Barley

During the middle half of the 20th century (1930s to 1980s) the U.S. beer market was generally characterized by -

- Increased product homogeneity and dominance of adjunct lager styles
- Decreasing number of brewing companies via attrition and consolidation
- Increasing dominance of a relatively small number of brands of adjunct lagers
- Slowly decreasing original gravities
- Relatively homogenous barley malt needs

Barley

Current Varieties

During this time breeders made important advances in:

- Yield.
- Disease/stress tolerance.
- Extract.
- High diastatic power.

Barley growers and the malting industry responded to relatively uniform brewer needs by developing a relatively small number of high diastatic power, high FAN malt varieties suitable for adjunct brewing.

Barley

Future Outlook

- The high number of brewing companies and number of craft brands means that continued innovation in all-malt brands will need to be fueled by an increasingly diverse barley malt supply.

Barley

Future Outlook

Malting Barley Characteristics for Craft Brewers

Barley

Future Outlook

To produce all-malt beer brands, craft brewers seek barley malts with

- Distinctive flavors and aromas
- Lower free amino nitrogen (“FAN”)
- Lower Diastatic Power (“DP”)
- Lower Kolbach Index (ratio of Soluble Protein to Total Protein, or “S/T”)

Barley

Future Outlook

To produce all-malt beer brands, craft brewers seek barley malts with

- Distinctive flavors and aromas
- As a group, craft brewers typically place a very high conceptual value on “flavor.”
- Craft brewers have diverse flavor preferences but are not able to articulate specific preferences at a varietal level, **yet.**

Barley

Future Outlook

To produce all-malt beer brands, craft brewers seek barley malts with

- Lower free amino nitrogen (“FAN”)
- Excess FAN levels in finished beer can significantly reduce product flavor stability especially in all-malt beers
- High finished beer FAN levels can result in decreased flavor and biological stability in the package.

Barley

Future Outlook

To produce all-malt beer brands, craft brewers seek barley malts with

- Lower Diastatic Power ("DP")
- Craft beers in general are brewed with all-malt grists, meaning they do not require such high levels of diastatic power.
- High DP grists can be very difficult to control during the mash.
- Over attenuation results in lower body and mouthfeel of the final product.
- Brand consistency can suffer

Barley

Future Outlook

To produce all-malt beer brands, craft brewers seek barley malts with

- Lower Kolbach Index (ratio of Soluble Protein to Total Protein, or “S/T”)
- Modest decreases in S/T are achievable

Barley

Future Outlook

Additional Challenges:

- Scale
- Contracting
- Geography

Barley

Future Outlook

Scale

- The U.S. malting industry is currently highly consolidated, with a relatively small number of very large operations
- The scale of such physical plants makes handling relatively smaller volumes of a larger number of varieties of barley and the resulting malts exceedingly difficult.
- Bridge: Existing malting companies will over time respond to rapidly evolving market requirements

Barley

Future Outlook

Contracting

- Only larger breweries have custom contracts with malt growers
- Communication channels between barley growers and brewers are poorly developed
- Bridge: All U.S. malting barley stakeholders will benefit from increased custom contracting by breweries of all sizes

Barley

Future Outlook

Geography

- A large proportion of current U.S. malting capacity is located in northern tier locations such as Minnesota, North Dakota and Eastern Montana which customarily have grown 6-row varieties to satisfy customer need.
- Larger brewers have begun to pivot towards 2-row varieties for economic reasons. Locations producing 2-row malting varieties are located farther west Central Montana, Idaho, Washington and Colorado

Barley

Future Outlook

Geography - Bridge

- Development of 2-row malting barley varieties as well as 6-row varieties suited for production of all malt beers in traditional 6-row growing regions is an important component to utilizing current malting capacity.
- Construction of additional malting capacity available to craft brewers in traditional 2-row growing regions

Barley

Looking to the future

American Malting Barley Association (AMBA)

National Barley Improvement Committee (NBIC)

North American Craft Maltsters Guild (NACMG)

Hop Prices:
Myths and Realities

What is causing recent increases in hop prices?

Hop Prices: Myths and Realities

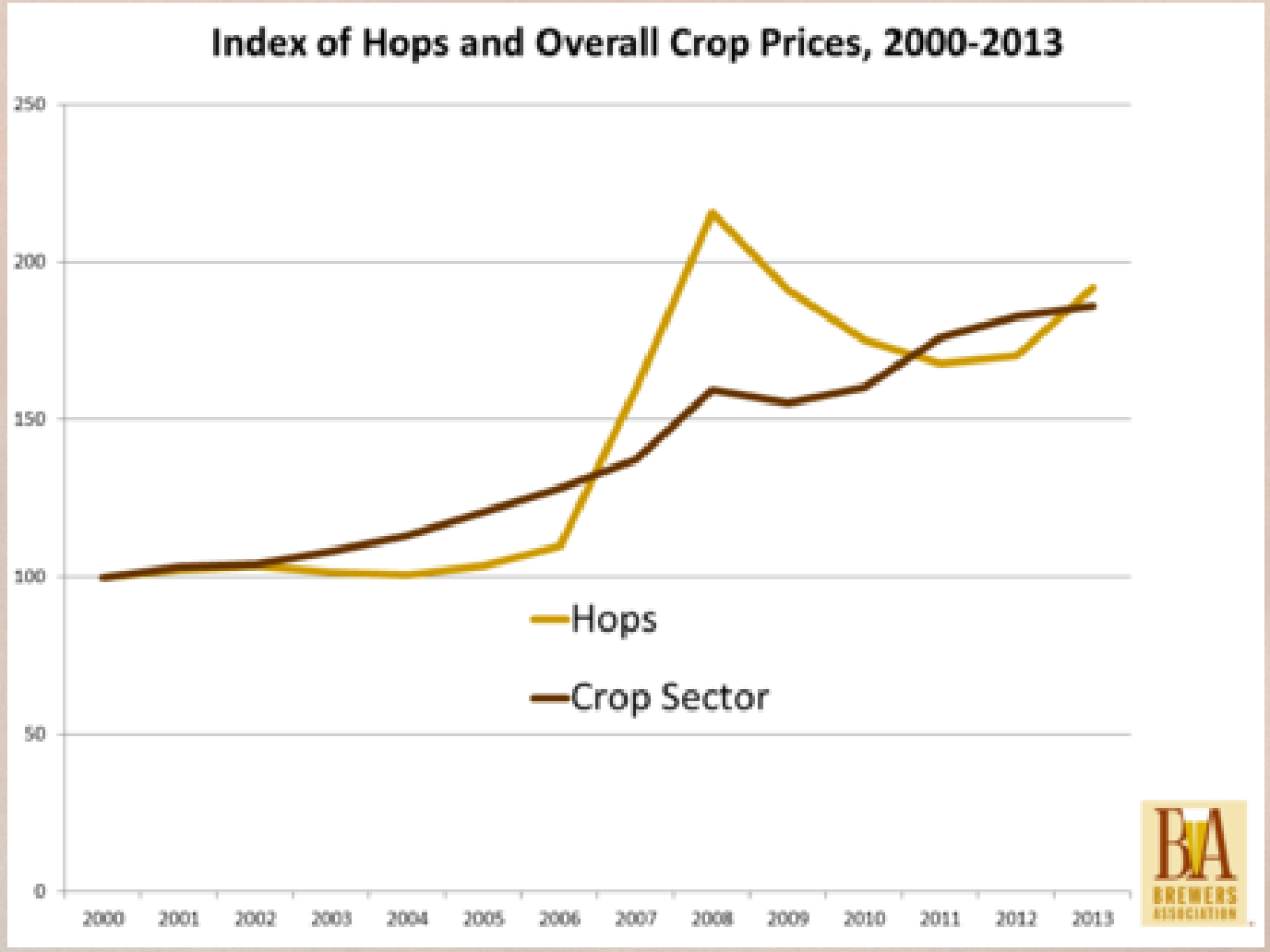
- Recent press blames increases in the price of hops on the popularity of IPA

Hop Prices: Myths and Realities

- Recent press blames increases in the price of hops on the popularity of IPA

- If only it were that simple!

Hop Prices: Myths and Realities



Hop Prices: Myths and Realities

What is causing recent increases in hop prices?

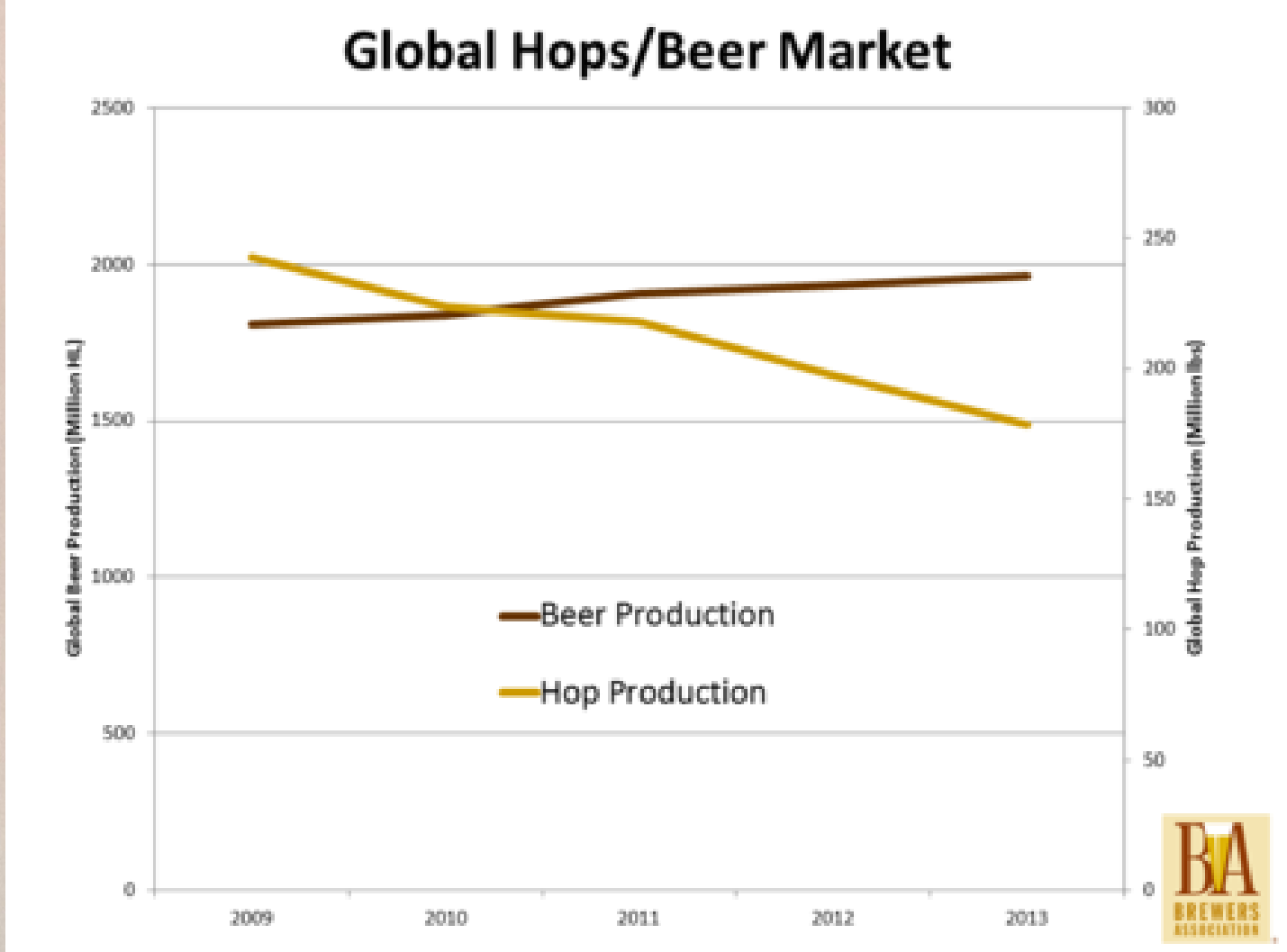
- Hop prices are only showing a modest increase in price in the last decade compared to other crops
- Hop prices are volatile

Hop Prices: Myths and Realities

What is causing recent increases in hop prices?

- Hops are a global commodity
- Globally beer production is up while hop production is down

Hop Prices: Myths and Realities



Hop Prices: Myths and Realities

What is causing recent increases in hop prices?

- We pay Brewers Association staff economist, Dr. Bart Watson, to tell us things like “Increased demand coupled with decreased supply equals increased prices.”

Hop Prices: Myths and Realities

What is causing recent increases in hop prices?

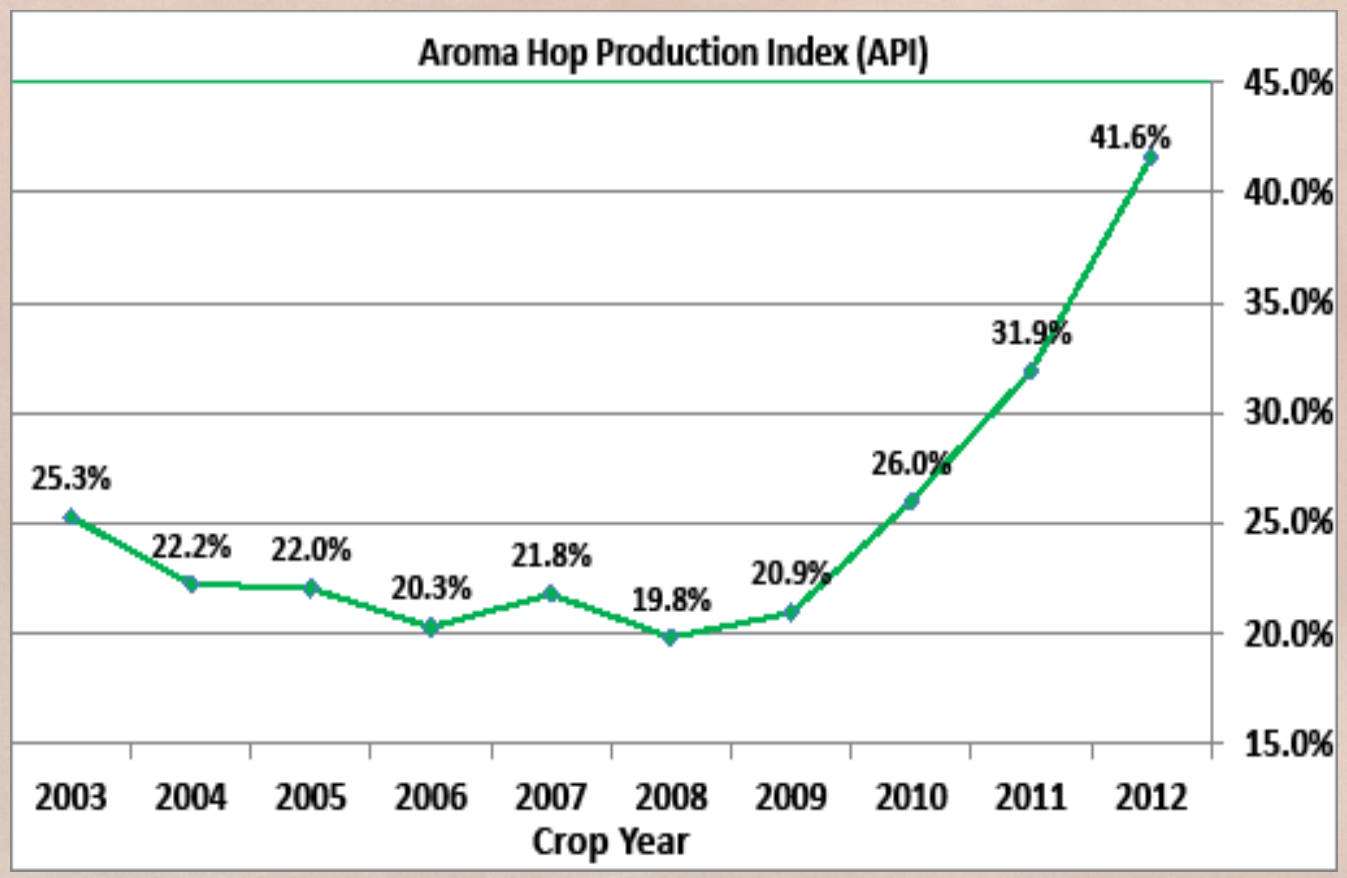
- "These trends are occurring at a time when US brewers are competing with a growing number of global brewers for US hops, which are increasingly popular outside the US."

Hop Prices: Myths and Realities

What is causing recent increases in hop prices?

- The shift from alpha acres planted to aroma acres planted. Aroma hops are much more costly than alpha hops due to lower yields
- Over ½ of the acres planted in the US last year were aroma hops, a very dramatic shift
- That trend will continue this year

Hop Prices: Myths and Realities



Hop Prices: Myths and Realities

What is causing recent increases in hop prices?

- A more segmented hop market as the number of hop varieties has increased. Increased segmentation means decreased scale. Decreased scale means increased cost.

Hop Prices: Myths and Realities

What is causing recent increases in hop prices?

- The more fragmented brewing industry, which means there is less scale buying than in the past. Again, decreased scale means increased cost.

Hop Prices: Myths and Realities

What is causing recent increases in hop prices?

- The rise of proprietary hops. Proprietary hops are varieties controlled by a company, which can control who grows it and drive up prices (similar to the way drug companies control drug prices to recoup investment)
- The development of public varieties is of tantamount importance to craft brewing

Hop Prices: Myths and Realities

What is causing recent increases in hop prices?

- The rise in hop acres. The current global demand for US hops means that growers are in structural growth mode. Investment in new acres means new costs, including putting in root stock and stringing it; putting in new trellises in idle dirt; buying new acres (or tearing out other crops, such as apple orchards).

Hop Prices: Myths and Realities

What can you do to insure surety of supply?

- Keep communicating current and future needs with your broker or grower
- Contract – Over 90% of brewers currently buy hops on contract
- Support efforts to develop new regional hop industries, when and where possible
- Support development of new public varieties

Hop Prices:
Myths and Realities

What is causing recent increases in hop prices?

- At 20% share, craft hop usage exceeds current total national production