

GLOBAL HOP MARKET ANALYSIS WITHIN THE INTERNATIONAL HOP GROWERS' CONVENTION

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Abstract

This paper analyzes global market statistics and identifies trends in hop production and usage that occurred during the period 2009 to 2019. It discusses also the rise of intellectual property in the form of proprietary hop varieties, the increase in demand for craft beer and their effects on hop prices. By 2019, the activities of hop growers and merchants around the globe were driven primarily by the demand for proprietary varieties. The production of the world's largest supplier of hops, the U.S., was heavily influenced by intellectual property with 57% of its production containing some form of intellectual property protection. The International Hop Growers' Convention (IHGC) is one of the few neutral bodies in existence and therefore facilitated communication between global industry members during this time of rapid change.

Key words: hop market, hop varieties, intellectual propriety, prices, IHGC

GLOBALNA ANALIZA HMELJSKEGA TRGA V OKVIRU SVETOVNE HMELJARSKE ORGANIZACIJE

Izveček

Članek analizira globalne tržne statistike in ugotavlja trende v pridelavi in rabi hmelja med 2009 in 2019. Obravnava rast intelektualne lastnine na področju lastništva sort hmelja, dvig povpraševanja po craft pivu in njun vpliv na cene hmelja. V 2019 je pretežna dejavnost hmeljarjev in trgovcev s hmeljem pogojena s povpraševanjem po sortah v privatni lasti. Pridelavo hmelja v največji hmeljarski državi ZDA izrazito zaznamuje zaščita intelektualne lastnine, ki se nanaša na 57 % pridelka hmelja. Svetovna hmeljarska organizacija (IHGC) omogoča v obdobju spreminjajočih se tržnih razmer nevtrarno globalno komunikacijo med hmeljarji in trgovci s hmeljem.

Ključne besede: hmeljski trg, sorte hmelja, intelektualna lastnina, cene, IHGC

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1 INTRODUCTION

From 2010 to 2019, historic and unprecedented changes occurred to both the supply and demand side of the global hop market that changed the role of hops for a generation. A wave of new proprietary varieties developed and released by private breeding programs in the U.S. over the previous decade increased in popularity.

By 2019, proprietary varieties solidified their majority position in the U.S. world hop market. Hop production in the U.S. was comprised of 57% proprietary varieties according to the German hop industry association (Piroué, 2019). The rapid growth of proprietary aroma varieties attracted the attention of media and hopheads worldwide. In 1997, the industry was comprised only of open source varieties (Pavlovič, 1997). By 2019, a majority of global production was proprietary. This change originated, in part, from the need for supply management, differentiation among competitors and greater added value, all of which warranted long-term sustainable prices.

This change and differentiation emerged from a decades-long trend of largely homogenous beer and hop production. Between 1985 until 2006, large breweries producing primarily lager- and pilsner-style beers grew larger. They consolidated global beer production gaining greater economies of scale along the way (NBWA, 2013). The brewers' pursuit of efficiency, trickled down to the hop industry in the form of prices that remained at or near the marginal cost of production. Among hop industry members worldwide, fierce price competition for an ever-shrinking market share ensued.

It was on that backdrop, in 2001, that one of the first proprietary varieties tracked as such by the United States Department of Agriculture National Agricultural Statistical Service, reported the Warrior® Brand YCR5 as "YCR5 (Warrior-TM)" in 2001 (USDA NASS, 2018). The USDA NASS had previously been tracking Columbus/Tomahawk® (aka: C/T/Z®) and Zeus for several years, but did not acknowledge or list them as the proprietary varieties they were with the requisite symbols (i.e., ® or ™). Due to disputes over intellectual property (IP) ownership between John I. Haas, Hopsteiner, and Yakima Chief, IP rights on these varieties were not strictly enforced among growers. In 2001, the companies reached an amicable solution, a compromise from which everybody got something of roughly equal value. The experience was the industry's first introduction to the importance and perceived value of proprietary varieties. During the years that followed, hop prices reached their nadir. Nevertheless, private breeding programs continued developing new varieties. The Simcoe®, YCR 14 and Citra® HBC 394 varieties, which together accounted for 19.2% of U.S. production in 2018, only crossed the USDA NASS reporting requirement threshold, which requires a variety to be

produced by three growers before it must be publicly reported, in 2008 and 2009 respectively (USDA NASS, 2018).

Between 2009 and 2019, U.S. growers increasingly focused on producing aroma varieties. They quickly abandoned the alpha market they had dominated for decades to develop relationships with customers who offered longer-term sustainable prices. During this time, the majority of the world's production of alpha-acids, often used by large global brewing companies, shifted from the U.S. to Germany, which had traditionally been known for its fine aroma hop varieties.

The craft beer trend spread quickly across the globe. Development of new proprietary varieties accelerated. Varieties like Styrian Wolf® in Slovenia, Mandarina Bavaria in Germany, Galaxy™ in Australia and Nelson Sauvin™ Brand 85-03-06 in New Zealand represented attempts by other producer groups to capitalize on the global popularity of craft beer and offer up unique hop flavors of their own. Brewers worldwide, emulated the changes they saw in American beer drinkers craving new interesting flavors, but this often meant using American varieties due to the flavors that terroir imposed on the hops themselves. There were several exceptions, most notably the Nelson Sauvin™ Brand 85-03-06 of New Zealand. Few other new proprietary varieties out of the hundreds available enjoyed similar unicorn-like success.

2 MATERIALS AND METHODS

Hop market data collection. As a global commodity traded over the counter between buyers and sellers, opportunities for public discussion regarding market information were traditionally rare. Prices were seldom discussed openly among members. Secrecy was paramount. Among merchants, discussing pricing strategy was illegal due to anti-trust legislation. The information the industry enjoyed about the international hop supply situation came largely from the three sources: (i) The Barth Report, published by the Barth-Haas, (ii) Hop Guidelines published by Hopsteiner, and (iii) the International Hop Growers' Convention i.e. IHGC.

While the Barth Report and Hop Guidelines offered a comprehensive look at the industry as a whole once each year, the IHGC offered a smaller glimpse into the mechanics of the hop market, but on a more regular basis. Furthermore, it was the only non-merchant group that collected and disseminated global hop. The IHGC has always met three times each year and has published statistical and industry related updates subsequent to each meeting. The statistical data reported was largely comprised of estimates from its members, which, in 2019 included merchants, growers and associations from around the world (IHGC, 2019).

Merchant estimations of hop acreage around the globe were by far some of the most valuable contributions to the IHGC meetings. Although some of the estimates provided were only a merchant's best guess based on their intimate feel for the local situation, they provided data that did not differ greatly from more rigorous statistical survey data when such data became available. An incredibly useful addition to each IHGC meeting are the German hop industry association's reports (DHWV, 2019). They often provided a very useful and unique perspective on global market conditions from a very macro level.

The IHGC is the equivalent of the United Nations (UN) of the hop industry. It has no authority to enforce decisions made there upon individual members or member organizations. Nevertheless, the discussions that take place are incredibly valuable to all who participate (Pavlovič and Koumboulis, 2004; Pavlovič, 2014). Rapid changes necessitated increased communication between members of any industry to facilitate increased understanding of market dynamics and better decision making. From 2009-2019, the level of participation in IHGC activities increased, not only among existing members, but through the acceptance of new members into the fold. The IHGC provided a rare forum for open communication and a regular finger on the pulse of the market at meaningful periods during the production season. Without such communication, the opportunity for true clarity might otherwise only be possible after the fact, if ever. Although the IHGC considers membership requests from any party with an interest in hops, not everybody recognizes or fully appreciates the advantages the organization offers. Therefore, membership and attendance at meetings, typically around 30 people, enables professional hop market trends assessments. As it evolved together with the changing industry, the IHGC enacted new bylaws (Compliance Rules) to formalize and clarify the organization's activities while regulating the topics discussed during meetings (Pavlovič, 2019).

As of the November 18, 2019, there were 20 country members and 14 organization members. Under the umbrella of each of these organizations and countries, there were typically multiple members in attendance. The primary goal stated in the constitution of the IHGC, which may be found on the organization's web site www.ihgc.org is "... to safeguard the interests of the hop growers and of the whole hop industry in the member countries" (IHGC, 2019).

3 RESULTS AND DISCUSSION

Between 2009 and 2019, craft beer production skyrocketed in response to an unquenchable thirst for the different beer flavors and styles produced by craft brewers (Watson, 2019).

American hop acreage increased 93.8% between 2011 and 2019 as seen in figure 1 (USDA NASS, 2019). Global hop acreage, as also seen in figure 1, increased by only 6.5% during that same time (Barth-Haas, 2019). Proprietary alpha varieties like C/T/Z® in the U.S. and Herkules in Germany were no less significant to the privatization of the genetic material within the industry. The intellectual property movement spread quickly across the globe. New varieties like Styrian Wolf® in Slovenia, Mandarin Bavaria in Germany, Galaxy® in Australia, Nelson Sauvin™ Brand 85-03-06 in New Zealand, and many more all vied for a share of the craft beer market with its lucrative and sustainable pricing (IHGC, 2019). Twenty-one years earlier, there were no proprietary hop varieties in the United States (USDA NASS, 2018).

From 2011 through 2018, the U.S. and German share of global production grew. By 2019 the U.S. and Germany produced 39% and 38% of the global crop respectively as seen in figure 1 (IHGC, 2019). Among the 18 other countries tracked by the IHGC, half had developed proprietary varieties of their own (IHGC-STC, 2019). The rapid reorientation by the industry toward proprietary varieties represented the efforts by the players in the brewing and hop markets to differentiate themselves from their competition. The attraction to the private breeding programs was also, in part, the strength of IP law.

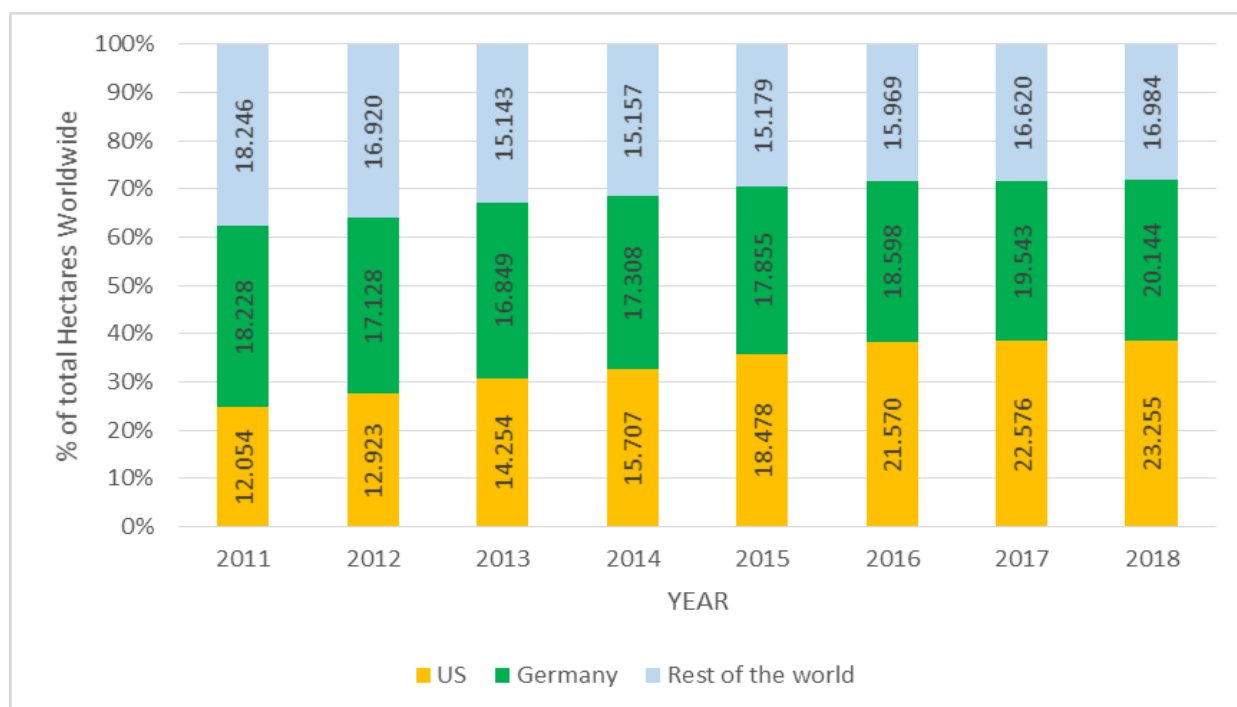


Figure 1: Production Region of Global Hop Acreage by % (Source: IHGC, 2019).

With many proprietary varieties, production, harvest timing, cultural practices and sales were controlled by the owners of the IP as terms of their licensing. In some cases, owners of IP retained title to the genetic material produced on third party

farms. This protected their massive long-term investments into creating new genetic material. Then there were the royalties. Paid per kilogram of hops produced, they could range from \$0.55 - \$0.88 per kilogram. Not only did this create extra profit for the owners during times when prices were profitable. Should prices ever return to a level where they covered only variable costs, it created a two-sided deadweight loss for the companies owning IP (Economides and Katsamakas, 2006).

Figure 2 demonstrates the levels to which season average prices in the U.S. dropped during the period from 1985 until 2006. During that time, both the hop and brewing industries suffered from the characteristics of a Bertrand trap where price was the primary means of competition (Cabral and Villas-Boas, 2005). In the hop industry, under such conditions, the growers or merchants that enjoyed greater economies of scale delivered product at lower prices. When prices were closer to marginal cost levels the grower or merchant with the greatest economies of scale (i.e., who produced more product at a lower fixed cost per unit) lost less money per unit. This counterintuitive strategy translated to survival as low-cost producers outlasted higher-priced competitors (USDA Agricultural Marketing Service, 2003). The data revealed exactly that in the attrition of brewers and growers in the U.S. during the 20th century. In the U.S., between 1950 and 2001, the number of hop farms shrank by 93% (MacKinnon, 2006). Many did not survive.

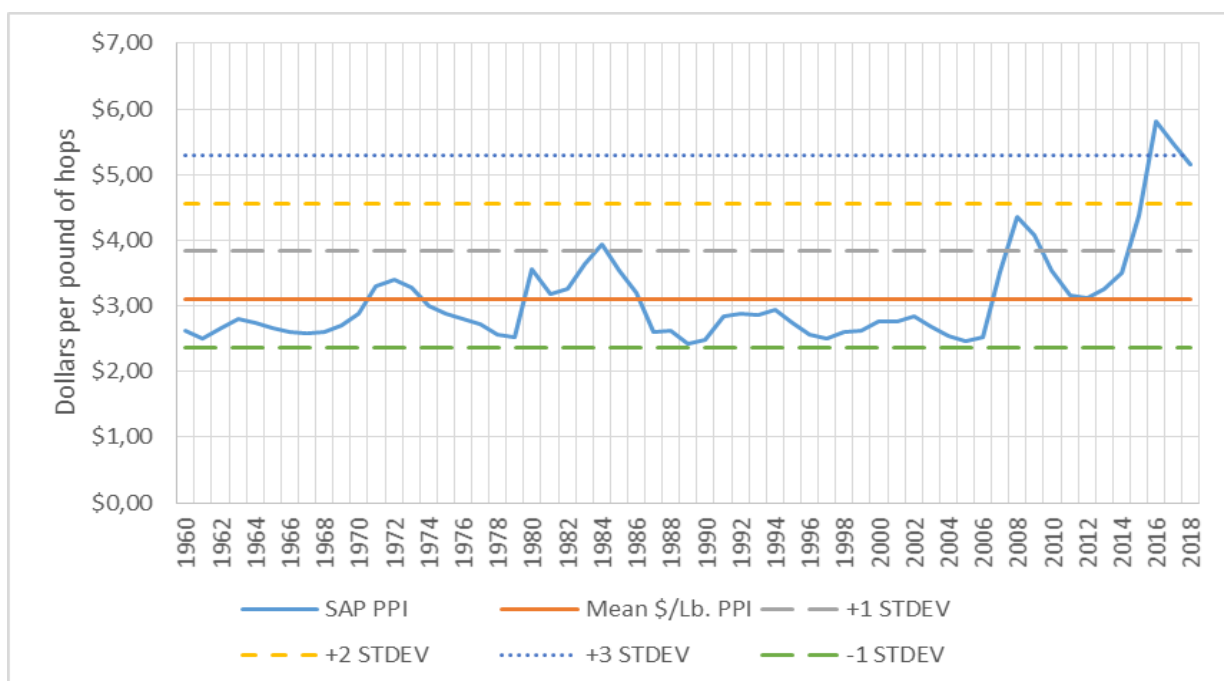


Figure 2: Season Average Price in the U.S. Adjusted for Inflation using the Producer Price Index PPI 1960-2018 (Source: USDA NASS, Federal Reserve Bank of St. Louis).

During that same period, production increased nearly 13% and acreage decreased by 10% (Barth-Haas, 2019). Two Federal marketing orders, enacted to regulate the volume of hops sold into the market, were terminated. Hop industry members worldwide suffered similarly devastating rates of attrition. The industry writhed under the freedom imposed by a completely open market and struggled to find a method to better manage supply.

The craft beer revolution, as many came to call it, was led by rapidly increasing demand for the India Pale Ale (IPA), a hop forward beer style (Brewers Association, 2019). In some cases, IPA style beers used 5-6 times the quantity of hops of a pilsner or lager. The surge in demand for craft beer styles with their high hopping rates was so powerful that it drastically altered the course of global hop usage as can be seen in figure 3 (Barth-Haas, 2019).

For the first time, in the U.S., proprietary aroma varieties like Citra®, HBC 394, Simcoe®, YCR 14, Mosaic®, HBC 369, Amarillo®, VGXP01 and Pahto®, HBC 682, were responsible for nearly 60% of total U.S. production (IHGC, 2019). Much of the rest of American production of public aroma and high alpha-acid producing varieties, like Cascade or Zeus respectively, were also produced primarily for the craft beer industry. By 2019, Germany produced 50% more alpha-acids than the U.S., primarily from the Herkules variety (IHGC, 2019).

Demand for American craft beer and production soared. With it, demand American varieties for use in U.S. craft beer production decreased exports of American hops by 27% from 71 million pounds in 2009 to a low of 51.6 million pounds in 2014 (Hop Growers of America, 2019). As a result, the adjusted season average price for American hops and the average price reported for German hops increased between 2009 and 2018 in response to intense demand (IHGC, 2019).

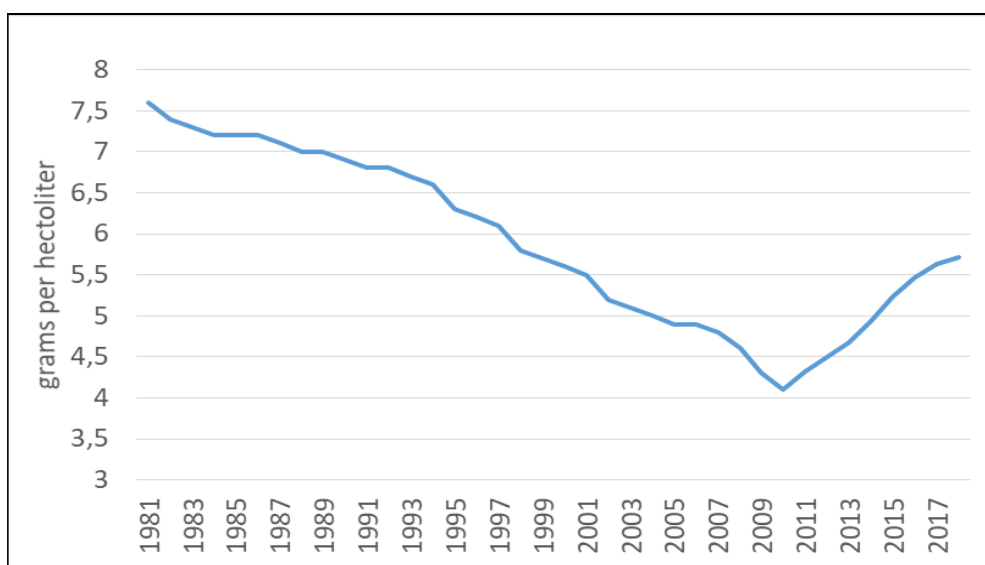


Figure 3: Hopping rate of alpha-acids per hl of beer – globally 1981-2018.

The value of U.S. and German forward contracts were \$204 million (equivalent to 180 million Euros) and 300.1 million Euros in 2001 respectively. U.S. forward contract value soared to a peak of \$2.7 billion (2.52 billion euros) in 2016, after which they began to decline. The value of German forward contracts continued to grow and as of 2018 were valued at 1.06 billion Euros. Figure 4 displays the total value of contracted hops for the U.S. during this time also greatly increased (IHGC, 2019). All of this occurred despite the fact that global beer production plateaued in 2016 (Barth-Haas, 2019).

An accurate demand estimate for hops has always been elusive. Brewers large and small distribute requests for offers for hops across multiple hop merchants and increasingly common directly to growers seeking the best terms in an attempt to satisfy their needs. The IHGC has always made an effort to open a window onto both the supply and demand sides of the industry in the form of member discussion and debate.

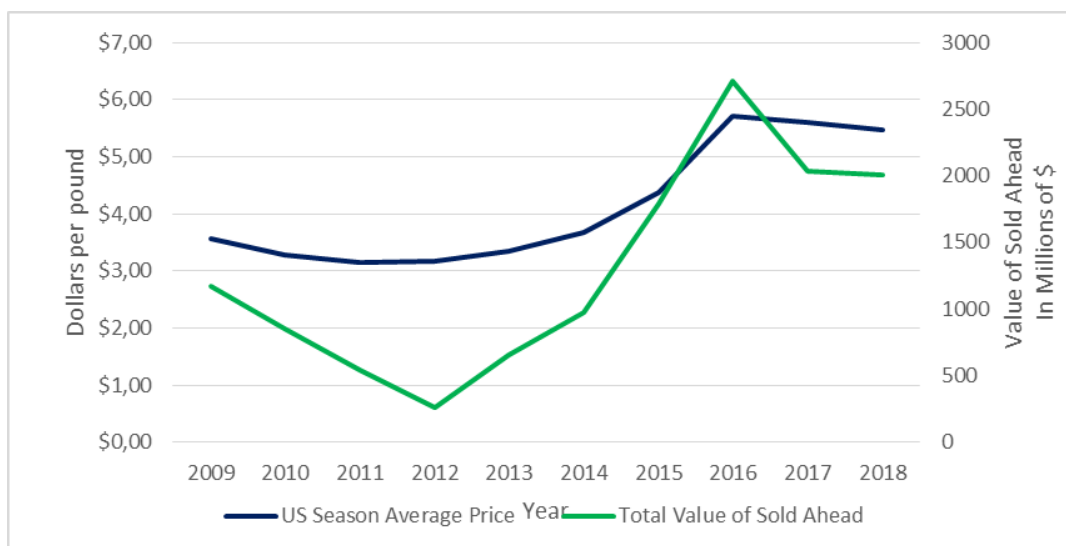


Figure 4: US Season Average Price & Value of Sold Ahead as reported to IHGC.

4 CONCLUSION

The future of the organizations rests in its ability to collect accurate and useful information and to convey that information to its members in a timely manner. The IHGC is in a constant battle to elicit more accurate information regarding supply and demand. Proprietary varieties, which in 2019 constituted a significant portion of the annual global production, represented the most recent chapter. Never before has so much information been concentrated among so few people. The change truly represents an opportunity for increased harmony within the industry resulting in long-lasting stable market conditions that are favorable for IHGC members, something which would fulfill its primary objective.

American participation is another perennial question for consideration by the organization. Given the relative size of producers within the U.S., should larger farms controlling substantial acreage be encouraged to join and participate in IHGC meetings at some level to further improve the accuracy of the data? Is such participation realistic, or even possible? These issues and more will determine the face of the IHGC and its ability to collect and report information in the future.

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