

FOOTPRINTS

AHTANUM® • CITRA® • EKUANOT™ • LORAL® • MOSAIC® • PALISADE® • SIMCOE® • WARRIOR®



SELECT
BOTANICALS
G · R ·  · U · P

ANNUAL REPORT • APRIL 2018

SELECT BOTANICALS GROUP

is proud to present our third full version of our FOOTPRINTS report. As with previous versions the focus is on our stated purpose “...to create, grow, and protect value for all within our footprint.” We are passionate about our purpose and we hope it shows. Specifically, the Spring 2018 issue focuses on some of the metrics by which we gauge success. Here are a few highlights from the report in our key functional areas:

DEVELOPING FIRST CLASS HOP VARIETIES

SBG’s acreage footprint grew to over 11,000 acres in 2017. This was spread across 8 commercialized varieties, three of which are in the list of top 10 ten hop varieties by acreage. Additionally, our partnership in the Hop Breeding Company (HBC) continues to yield exceptional results, including the release of HBC 438 as SABRO™, arguably HBC’s most extraordinary brand to date. In this report we’ve also detailed several up and coming selections in the pipeline.

RELENTLESSLY PURSUING QUALITY

In 2017, our interns walked every one of those 11,000 acres multiple times looking for off types and quality issues. All of our growers adhere to the Yakima Chief-Hopunion (YCH) GREENCHIEF® program and now over 60% of the volume produced under FOOTPRINTS™ is GlobalGap certified, a clear indicator of our growers’ commitment to quality, product safety, and people. Our quality assurance initiatives resulted in unprecedented lot to lot consistency. As further evidence of our quality commitment, over 700,000 lbs. of hops were rejected for not meeting brand standards from the 2017 crop alone.

BUILDING MEANINGFUL RELATIONSHIPS

At SBG we are very proud to be part of a uniquely integrated and transparent supply chain. Our exclusive and innovative contract structure with grower owned YCH ensures a true farm to brewery connection. This allows SBG and YCH to return nearly 80% sales revenue back to growers. This has led to an industry leading level of quality, food safety, and environmental protection investments within our growers’ facilities. These growers have also committed to acreage adjustments when needed to maintain stability in an ever-changing market.

These relationships, from grower to brewer are critical for our collective success and where we are at has been several decades in the making. The issue’s feature article takes a deeper look at the forces that drive our philosophy. In that vein, if you want to see what we do first hand, consider this your invitation. Come on out, hop in the pick-up, and we’ll go out and put some fresh footprints in the field.

Thank you for your time,



Jason Perrault, CEO

Select Botanicals Group
11051 Lateral A • Toppenish, WA 98948
selecthops.com

By design we prosper
only when the connection
between grower and brewer
is strong and beer drinkers
are satisfied. Therefore, our
purpose is to

CREATE, GROW & PROTECT

value for all within
our footprint through
developing first class
hop varieties, relentlessly
pursuing quality, and
building meaningful
relationships.

FEATURES

- 4 The Evolution
Hop Grower & Brewer Relationship
- 13 Introducing SABRO™ HBC438

CONTENTS

- 3 Grower Owned Value Chain
- 7 SBG & HBC Brands
- 8 2018 Production
- 9 FOOTPRINTS® in the Field
- 10 Intern Update
- 11 Pipeline Report
- 14 Stewardship

Jason Perrault
CEO & Head Breeder, SBG
Managing Member, HBC
jason@selecthops.com

Drew Gaskell
VP Supply Chain
Management/Procurement
drew@selecthops.com

Amy Matthews
Brand Manager
amy@selecthops.com

Joe Catron
Quality Assurance Manager
joe@selecthops.com

Jaime Avalos
Breeding Plot Manager
jaime@selecthops.com

Jayce Avalos
Research Technician
jayce@selecthops.com

Ashley Hale
Special Projects Coordinator
ashley@selecthops.com



GROWER OWNED VALUE CHAIN

YAKIMA CHIEF-HOPUNION

The Select Botanicals Group (SBG) / Yakima Chief-Hopunion (YCH) value chain is designed to create value across the entire supply chain to meet the long term needs of all stakeholders. This value chain supports the missions of SBG and YCH through comprehensive sustainability programs that are unique to the grower owned supply chain. SBG has a shared ownership in the Hop Breeding Company, with SBG and John I. Haas each owning 50% of the company. The HBC breeding program is the front end of the supply chain and truly is the foundation of the grower owned value chain.

THE GROWER OWNED VALUE CHAIN		
	VARIETAL DEVELOPMENT	 <ul style="list-style-type: none"> Developing and releasing novel, disease resistant varieties that benefit brewer and grower HBC brands once commercially released, are jointly available through John I. Haas and YCH to ensure widespread availability.
	FOOTPRINTS™	<p>Brand Management Program</p> <ul style="list-style-type: none"> Varietal purity Best growing practices Optimal harvest timing Summer internship program <p>Economic Sustainability</p> <ul style="list-style-type: none"> Cost based returns that incentivize reinvestment and quality <p>Supply Chain Management</p> <ul style="list-style-type: none"> Diversified growing regions Long-term auto renewing contracts Data driven volume management Novel contracting between brewer and grower <p>Stewardship</p> <ul style="list-style-type: none"> Investing in our local community <p>Employee Development</p> <ul style="list-style-type: none"> Educational advancement Personal enrichment opportunities
	GREENCHIEF®	<p>Food Safety on the Farm</p> <ul style="list-style-type: none"> Food safety checklists modeled after USDA GAP Facility improvement and implementation program <p>Best Harvest Practices</p> <ul style="list-style-type: none"> Proper kiln temperatures Optimal moisture content Storage, handling, and receiving requirements <p>Data Collection</p> <ul style="list-style-type: none"> Harvest data information Pest control records <p>Sustainable Farming</p> <ul style="list-style-type: none"> Assessment of sustainable farming practices using the <i>Sustainable Agriculture Initiative's Farm Sustainability Assessment</i> Measuring and reducing environmental impacts of growing hops <p>Best Practices Team</p> <ul style="list-style-type: none"> Collaboration between farmers to develop best practices for yield, quality, and sustainable farming <p>Grower Feedback</p> <ul style="list-style-type: none"> Analysis of hops received, trueness to type, oil content and brewing values Annual quality reports including feedback from brewers One-on-one meetings with SBG to assist with improved quality
	TECHNICAL, INVENTORY, MARKETING AND BREWER SUPPORT	<p>Brewer Support</p> <ul style="list-style-type: none"> Support/involvement in trade: MBAA, guilds, and tradeshow Hop brand technical information and regional brewing experts <p>Brewery and Beer Market Connection</p> <ul style="list-style-type: none"> Brewery relationships, trend management, USA hops market exposure Brewing technical support: problem solving, recipe creation, hop usage improvements, and hop efficiency training Support of brewery events, educational programs, and lab support for beer <p>Processing and Packaging</p> <ul style="list-style-type: none"> Highest quality: pelletization, CO2 Extraction, Mini Baling, and LupuLN2 production Lab support from bales to finished products <p>Storage & Handling of Finished Goods</p> <ul style="list-style-type: none"> Inventory management and logistical support to ensure finished goods are stored, inventoried, and delivered to brewing partners <p>Hop Industry Leadership & Support</p> <ul style="list-style-type: none"> Members of trade organizations: International Hop Growers, Hop Research Council, Hop Liaison Committee (Hop Lab and Hop Commission), American Society of Brewing Chemists <p>Brewer Feedback</p> <ul style="list-style-type: none"> Hop selection - qualitative feedback delivered directly to growers Brewing with new hop varieties

THE EVOLUTION OF THE HOP GROWER & BREWER RELATIONSHIP

This article was compiled from input provided by members of the grower owner families of SBG and YCH including Tom Carpenter Jr., Steve Carpenter, Patrick Gasseling, Mike Smith, and Steve Perrault.

When the USDA hop acreage report is released later this summer, readers will notice a significant reduction in acreage in certain varieties, including Simcoe® Brand YCR 14 and Ahtanum® Brand YCR 1. Over the past several years, we have come to expect rapid expansion in the hop industry, but as brewer recipes and volume requirements change, acreage must be adjusted to meet a shifting market. The importance of being good stewards of the supply balance is rooted in the origins of YCH and SBG. We sat down with some of the hop growing families that founded the grower owned supply chain to get their perspectives and understand these roots.

THE FOUNDATION

Tom Carpenter Jr., the family patriarch of Carpenter Ranches, a six generation hop farm in Granger, Washington, was dissatisfied with the way that hops were bought and sold in the 1970s. “I just felt that growers needed to understand that for their sweat equity, they weren’t getting paid enough.” The hop supply chain during this time was not designed for transparency or equitability for all stakeholders. “There were essentially three different planets: growers, dealers, and brewers,” recalls Tom’s eldest son, Steve, currently the Chief Supply Chain Officer at YCH. There was a strong conviction amongst growers that the current supply chain model was not doing growers any favors. For revenue to increase to a level that would compensate growers fairly, there had to be conversation between growers, and brewers.

Tom Carpenter Jr., along with several other growers, convinced the hop dealers that they needed an opportunity to meet directly with brewers to explain the cost strains that growers had, and to request an increase in returns for their production. The dealers agreed to arrange a meeting between the growers and brewers, with the caveat that there would be dealer representation at the meeting.

During that first meeting, Tom walked into the office of the brewery purchasing manager at a brewery in the Midwest. The purchasing manager was seated with two stacks of paper; one was brewery purchase contracts, and the other was hop grower production contracts. The disparity between the pricing was too much for the purchasing manager or Tom to ignore. “We were getting \$0.55 or \$0.60 per pound for our hops and going broke.” The purchasing manager looked right at the dealer and said, ‘find one brewery contract in here for less than \$1.50. You’re the one that should be paying the growers more.’ I just smiled from ear to ear. I got what I was there for,” recalls T. Carpenter Jr. In that moment, it was apparent to Tom that the supply chain needed to change to benefit all stakeholders, and that started with developing relationships between growers and brewers.

“The supply chain needed to change to benefit all stakeholders, and that started with developing relationships between growers and brewers.”

- Tom Carpenter Jr.

THE FORMATION

In the 1980s, several growers, including Tom Carpenter Jr., began building on the vision to develop sustainable business relationships with brewers. Steve Perrault, President of Perrault Farms in Toppenish, Washington shared, “when we started this, we just wanted to survive, we didn’t want to become rich, we wanted fair, sustainable prices for brewers and growers, which is as true today as it is 25 years ago.” Armed with this vision, two large grower owned handlers emerged, Yakima Chief, Inc (YCI), and Hopunion, LLC, ultimately merging into Yakima Chief-Hopunion in 2014.



These same growers persevered through trial and tribulation over the following 25 years, coming to the brink of failure multiple times. Many brewers and growers have heard stories about the challenges growers faced during that era, but without direct experience, it may be difficult to understand how truly tough it was. There were years when hop farmers could not get into their fields for planting until April because there wasn't enough money to pay employee wages. Farm owners would delay drawing a salary for extended periods of time, sometimes even up to six months. YCI was nearly bankrupt twice, but with each scare, valuable lessons were learned. "Every time a market would take off, growers would plant on speculation. By the next year however, the market would come right back down," said Mike Smith of Loftus Ranches.

The imbalance of supply and demand has damaged the industry repeatedly for generations, and continues to reinforce the importance of transparency and communication between growers and brewers. The early to mid-2000s may have been the worst time period of supply imbalance on memory. "For many, many years, brewers received hops well below production costs, forcing several good hop farming families out of the industry," said S. Perrault. A fourth-generation hop grower at Gasseling Ranches in Wapato, Washington, Patrick Gasseling recalls, "the hop market worsened with each year, as a result of excess supply and poor returns." By harvest of 2007, a global hop shortage ensued, and the growing industry imploded with little to no money available. The shortage of alpha hops led to a spike in grower returns as high as \$100 per pound of alpha. The price spikes, however helpful in getting the growing industry stabilized, proved to be a hindrance to real sustainability throughout the supply chain. While larger breweries may have had a greater capacity to absorb volatility that resulted from inadequate supply and increased hop costs, smaller breweries faced a far greater challenge in their ability to source and pay for them.

As the late 2000s ushered in a new level of growth in the craft beer market, it became clear that the opportunity for long term health and transparency through the grower-brewer connection was a possibility. A willingness to learn from the past adversity, and shifts in supply and demand was necessary for the success of a transparent supply chain. Both SBG and YCH are participants in this supply chain and continually strive to create sustainable value for all stakeholders.

THE FRUITION

Steve Carpenter has a unique perspective on this supply chain through his former life as a hop grower, where he was instrumental in the creation of SBG and YCH, and in his current role at YCH. Steve shared, "it is the growers' responsibility to know what the brewers need." This supply chain is a system that is focused on creating value for growers and brewers; excess supply creates waste in the system, compounds inventory and impacts quality. As brewers' tweak recipes affecting volume needs, grower responsiveness for balancing acreage accordingly is imperative. It enables brewers to get the volumes they need while reducing excess of what isn't needed. Steve went on to say, "acreage balancing creates transparency, which didn't exist before this supply chain."

"Balancing supply and demand, is in the best interest of everybody," says M. Smith, "to the degree that prices fall below the cost of production, that is what leads to volatility." Volatility in this sense is not simply referring to supply and price, but quality as well. As prices drop, growers cannot afford to invest in the level of quality that brewers deserve. Hop growers live in a competitive world, but still have to have the financial stability to invest in innovations and facilities to meet brewer expectations. Growers don't want another industry implosion, where the acreage stays the same or keeps increasing, while brewers gain by capitalizing on lower markets. Under this scenario, it's the growers that lose. When re-investments into farms and growing decline, quality declines, farms go bankrupt, and eventually prices spike. By stabilizing acreage and pricing, growers have capital to invest in the industry, new varieties, infrastructure, and increased quality assurance practices.

Craft brewers are advocating for advancements in food safety standards, novel hop varieties, improved consistency, updated facilities, and increased volume. These are possible with sustainable grower returns. As recent as four years ago, hops were grown below the cost of production (Figure 1). Today, however, through the SBG/YCH model, growers are able to cover the cost of production and receive a fair profit, with money remaining to invest with confidence for their future. “We take pride in providing a strong return to grower, but that must translate into investments in quality. This has to happen to get the SBG grown and YCH processed hops into the best beers in the world. If we don’t invest in quality, we are simply not holding up our end of the bargain,” stated S. Carpenter.

In referring to the importance of learning from the past with a look to the future, both M. Smith and S. Perrault emphasized that, “there is no room for greed in any part of the supply chain, we have to be fair and think about sustainability and legacy.” Figure 2 illustrates the importance of being fair and transparent. Using the same data from Figure 1, with the reinvestment costs removed it becomes clear how growers could take advantage of current industry returns by not investing in quality.

THE FUTURE

In 2018, SBG will adjust acreage to balance it with supply needs. Please reference page eight for the list of acreage adjustments. It is to be noted that outside of the addition of a few acres of some advanced experimental varieties, there will be a net reduction in acreage of the brands managed under SBG’s FOOTPRINTS® program. Growers may not be happy about removing acreage, or changing to a different variety, but, “it points to how much stronger you are collectively than you are individually,” explained M. Smith. This means that sometimes you have to give something up in the spirit of cooperation as a group; it allows you to participate in an improved business model, with a fair supply chain. P. Gasseling added, “I want my kids to have the same opportunity as I had; removing acreage and balancing supply and demand increases confidence that I can do that.”

In 2018, the cooperative transparent relationships between growers and brewers that T. Carpenter Jr. envisioned in the 1970s exist and are driving the ability to balance acreage with returns that allow growers to reinvest in relationships with the brewing community. After nearly 30 years of work, transparency and communication have helped establish a “new normal” in the supply chain.

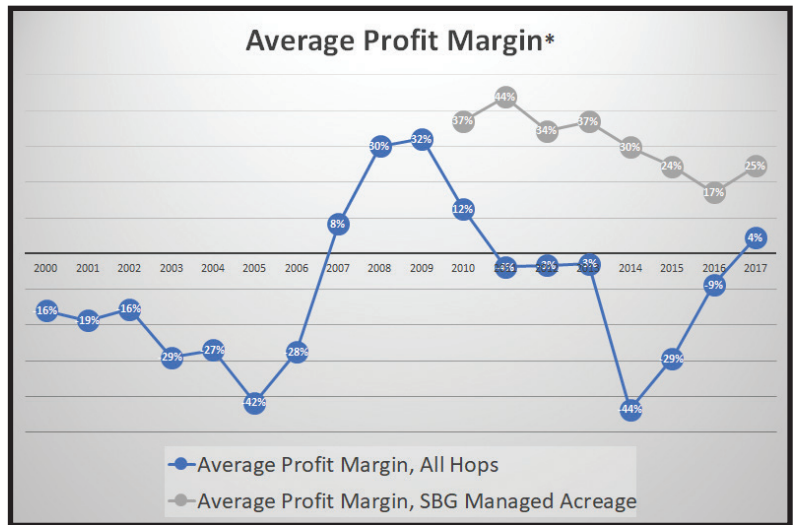


FIGURE 1

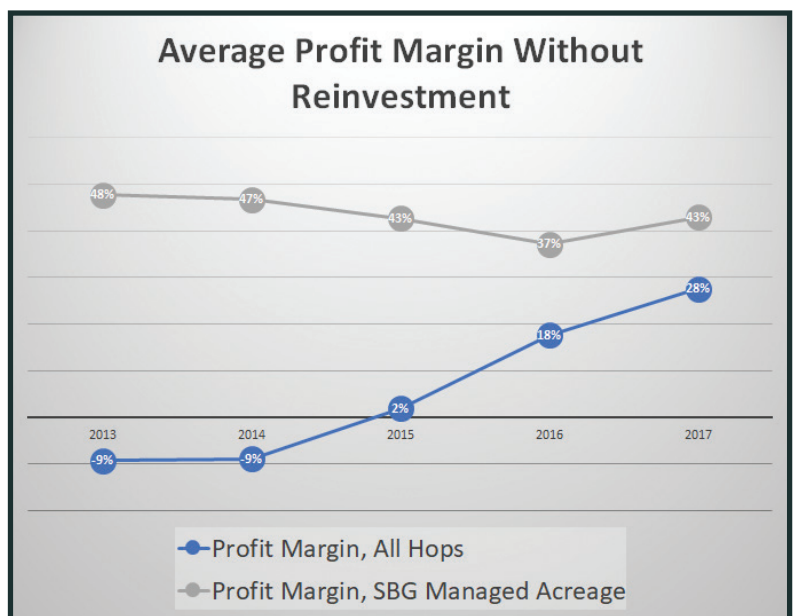


FIGURE 2

*Average profit margin based on returns, yields, and costs obtained from USAhops.org and grower surveys. https://www.usahops.org/img/blog_pdf/105.pdf <https://www.usahops.org/growers/cost-of-production.html>

BRANDS

SELECT BOTANICALS GROUP



AHTANUM® BRAND YCR-1			RELEASE DATE 1997
Citrus • Earthy • Floral • Spice			
ALPHA	BETA	CO-H	TOTAL OIL
5.7-6.3%	5-6.5%	30-35%	0.8-1.2 ml



PALISADE® BRAND YCR-4			RELEASE DATE 2003
Apricot • Grass • Starfruit • Floral • Spice			
ALPHA	BETA	CO-H	TOTAL OIL
5.5-9.5%	6-8%	24-29%	1.4-1.6 ml



SIMCOE® BRAND YCR-14			RELEASE DATE 2000
Piney • Citrus • Passion Fruit • Earthy			
ALPHA	BETA	CO-H	TOTAL OIL
12-14%	4-5%	15-20%	2-2.5 ml



WARRIOR® BRAND YCR-5			RELEASE DATE 2000
Very clean bittering hop			
ALPHA	BETA	CO-H	TOTAL OIL
15-18%	4.3-5.3%	22-26%	1.3-1.7 ml

HOP BREEDING COMPANY



CITRA® BRAND HBC 394			RELEASE DATE 2007
Tropical Fruit • Grapefruit • Melon • Gooseberry • Lychee Fruit • Citrus			
ALPHA	BETA	CO-H	TOTAL OIL
11-13%	3.5-4.5%	22-24%	2.2-2.8 ml



EKUANOT™ BRAND HBC 366			RELEASE DATE 2014
Melon • Berry • Citrus-Lime • Apple • Papaya			
ALPHA	BETA	CO-H	TOTAL OIL
14.5-15.5%	4.5-5.5%	32-38%	2.5-4.5 ml



LORAL® BRAND HBC 291			RELEASE DATE 2016
Floral • Citrus • Peppery • Dark Fruit			
ALPHA	BETA	CO-H	TOTAL OIL
11.3-12.2%	4.9-5.4%	21-24%	1.8-2.9 ml



MOSAIC® BRAND HBC 369			RELEASE DATE 2012
Fruity • Floral • Citrus • Earthy • Melon • Tropical • Blueberry			
ALPHA	BETA	CO-H	TOTAL OIL
11.5-13.5%	3.2-3.9%	24-26%	1-1.5 ml

PRODUCTION

HOP ACREAGE BY BRAND

As the fall crop transitions from bine to processing, SBG and YCH work closely together to evaluate the balance between planted acreage and the following year's anticipated brewer demand. Finding this balance requires significant time and planning, as well as the acknowledgment that mother nature will always be an unknown variable with regard to yields. For the 2018 crop year, the following adjustments will be made to the SBG managed acreage.



- 90 ACRES

AHTANUM® BRAND YCR-1	HARVEST YEAR	ACRES
Production for Harvest 2018 will decrease by 90 acres.	2017	358
	2018	268



STABLE

PALISADE® BRAND YCR-4	HARVEST YEAR	ACRES
Production for Harvest 2018 will be stable, no change.	2017	571*
	2018	571*



- 665 ACRES

SIMCOE® BRAND YCR-14	HARVEST YEAR	ACRES
Production for Harvest 2018 will decrease by 665 acres.	2017	4,524
	2018	3,859

*This acreage is an approximation



+ 35 ACRES

WARRIOR® BRAND YCR-5	HARVEST YEAR	ACRES
Production for Harvest 2018 will increase by 35 acres.	2017	230*
	2018	265*

*This acreage is an approximation



+ 629 ACRES

CITRA® BRAND HBC 394	HARVEST YEAR	ACRES
Production for Harvest 2018 will increase by 629 acres.	2017	2,850
	2018	3,479



STABLE

EKUANOT™ BRAND HBC 366	HARVEST YEAR	ACRES
Production for Harvest 2018 will be stable, no change.	2017	601
	2018	601



STABLE

LORAL® BRAND HBC 291	HARVEST YEAR	ACRES
Production for Harvest 2018 will be stable, no change.	2017	112
	2018	112



- 90 ACRES

MOSAIC® BRAND HBC 369	HARVEST YEAR	ACRES
Production for Harvest 2018 will decrease by 90 acres.	2017	1,745
	2018	1,655



FOOTPRINTS® IN THE FIELD

HIGHLIGHTS 2017, LOOKING FORWARD TO 2018

FOOTPRINTS® is the comprehensive brand management program SBG employs to ensure the highest level of attention is given to the growing and harvesting of our hops. The following 2017 highlights support the validity of our program and also guide us in our continuous improvement efforts.

VARIETAL PURITY

- The number of male plants found in SBG fields were reduced by over 30%.
- Approximately 300 acres replaced with hop stunt viroid free rootstock.
- Clean plant repository being built for future propagation.

FOOD SAFETY

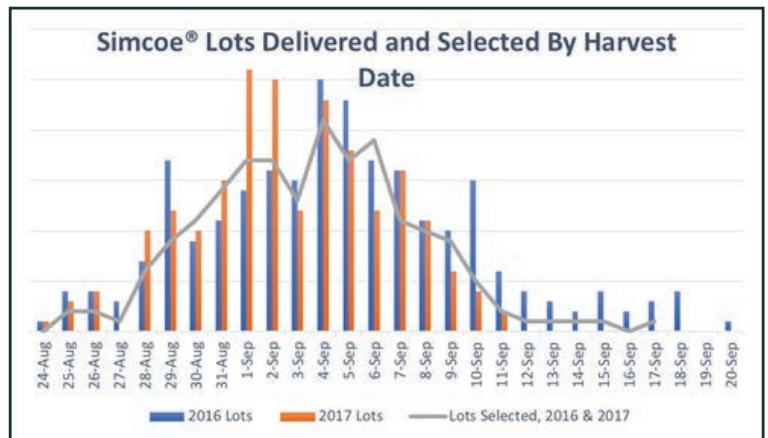
- As of 2017, 18 farms growing on behalf of SBG achieved or are working toward GlobalGap certification.

CROP MANAGEMENT

- Developing a special projects program in 2018 to improve growing practices.
- Increased focus on best practice program in conjunction with Yakima Chief-Hopunion.

HARVEST QUALITY

- Narrowed harvest windows for Simcoe® by 10 days, Citra® by 8 days, and Mosaic® by 6 days to reflect brewer preference.
- Rejected over 700,000 lbs. that did not meet brand specifications for quality.
- Highest harvest date consistency in FOOTPRINTS® program history.



- On average, the 2017 seed content percentages for the SBG managed production were below the seed content percentages for the total production in the United States.

	Total USA Production	SBG Managed Production
Overall	0.87%	0.48%
Washington	0.67%	0.34%
Oregon	2.47%	2.01%
Idaho	0.56%	0.05%

INTERN UPDATE

The internship program at SBG focuses on improving quality in the field through intensive data management, roguing, and special projects. Our goal is to grow value for all within our footprint; part of that is creating opportunity for young, eager individuals to get experience in the hop industry.

The interns of 2017 set the bar for upcoming classes to aspire to. Strong backgrounds in soil science, fermentation, and ecology combined with a shared sense of family and community helped forge lasting ties among the group. With a concerted focus on problem fields in Oregon, the 2017 interns were able to find and remove over 1,000 male plants! They were also instrumental in harvesting experimental hops, conducting an oil maturation study, collecting dry matter samples, and organizing tours for brewers from around the world. This group made an enduring impact on SBG and we wish them the best in all of their future endeavors.

2017 SBG INTERNS

- Brenan Ball
Washington State University
- Angus Chang
Cal Poly
- Ada Harris
University of Wyoming
- Cynth Hastings
Ohio Wesleyan University
- Taft March
Miami University
- Kristie Shomsky
Colorado State University
- Lauren Yap
Oregon State University

2018 INTERNSHIP PREVIEW

Focusing on continuous improvement and aspiring to lead an industry by example are two hallmarks of any successful organization. At SBG, we hold both of these tenets in high regard, and our actions reflect this. In addition to the unparalleled scouting services our interns provide, 2018 will also see an increased emphasis in soil sampling, training & harvest data collection, and food safety projects designed to aid our growers in producing world class hops. Hiring is about wrapped up, and we are eagerly awaiting the June arrival of the 2018 class of SBG interns.

INTERN SPOTLIGHT

Ashley Hale, 2016 intern
Special Projects Coordinator, Select Botanicals Group, LLC

Ashley Hale sat down with SBG's Joe Catron to discuss her new position with SBG:

How did the internship benefit you?

The internship was beneficial because it moved me out of the lab and into the field. This emphasized the importance of getting boots on the ground, and how quality truly begins at the growing level versus just on a production / laboratory level.

Now that you have been hired on at SBG, what are you most excited about learning?

I am excited to get into the brewhouse and start crafting beers on the SBG pilot system. Being able to work with experimental hops and gain a better understanding of how they play a role on the sensory level and beer flavor profiles will greatly expand my knowledge. I am also excited to work with the internship program and hopefully be able to pass on the importance of the work they do with SBG. I am looking forward to being present for the entire crop cycle from planting to harvest. Not to mention experiencing my first hop harvest, and all it has to offer.

How do you foresee applying your unique skill set to the success of the company?

I foresee my skill set contributing to the success of the company because I have a passion for, and experience with food science and safety, fermentation and quality assurance, and can bridge this passion with the hop growing aspects of my position with SBG.

Describe the culture and mission of SBG and why you were drawn to working here.

This opportunity ties together some of the things I am most passionate about; being able to work outside, as well as continuing to utilize my food science and fermentation background in the lab, all while brewing great beers. I also believe in producing a quality product that one can stand behind, while helping to build important relationships between hop growers and brewers.

Ashley holds a BS in Food Science and Technology, including an option in Fermentation Science from Oregon State University and a BS in Biological Anthropology from the University of Oregon. Ashley's most recent employment was with Hood River Juice Company in the Quality Assurance Department.



PIPELINE REPORT

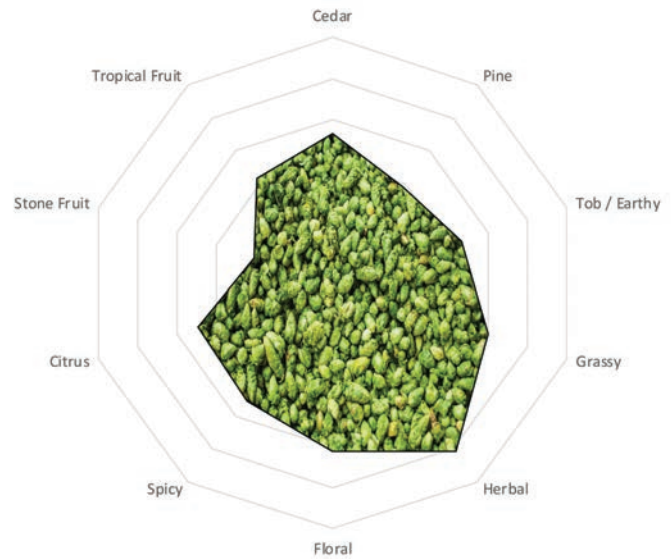
HOPS ON THE HORIZON

In 2003, the SBG breeding program joined forces with the John I. Haas, Inc. breeding program to form the Hop Breeding Company (HBC). This hop breeding powerhouse takes advantage of the combined resources of both companies through full integration of breeding efforts, with a mission to develop pest and disease-resistant hops with strong commercial qualities. Breeding hops is an extremely long process, taking 11 plus years to breed a commercial hop from initial cross to commercialization. Once a selection survives the rigorous scrutiny of the breeding program's early stages, we concentrate on not only whether or not a selection's unique qualities will consistently translate well into beer, but also if it is agronomically beneficial to growers. With these key drivers in mind, HBC annually reviews the data collected during the previous year's hop production and makes the decision to advance or remove selections from the breeding program.

We could not be successful in getting the new HBC brands to market without the data feedback we receive from our various grower and brewer trials. We are pleased to share our pipeline report with the selections that may or may not be the next new release from the HBC breeding program.

HBC 472			
ALPHA	BETA	CO-H	TOTAL OIL
7.5-9.6%	7.1-8.8%	46.8-48.7%	1.4-1.9 ml

HBC 472 is a progeny of a *neomexicanus* mother, with an exceptionally unique aroma that imparts a pronounced vanilla, coconut, bourbon barrel character to beer. Its late maturity fits into current picking windows.



HBC 630			
ALPHA	BETA	CO-H	TOTAL OI
13.6-14%	5.6-6.3%	23.5-26%	2.5-3 ml

HBC 630 was selected for a distinct candy like - think cherry Ludens - aroma with tropical fruit notes as well. The aroma translates nicely in beer.



HBC 520

ALPHA	BETA	CO-H	TOTAL OIL
10.2-12.8%	4.8-6%	22.5-23.4%	1.6-2.0 ml

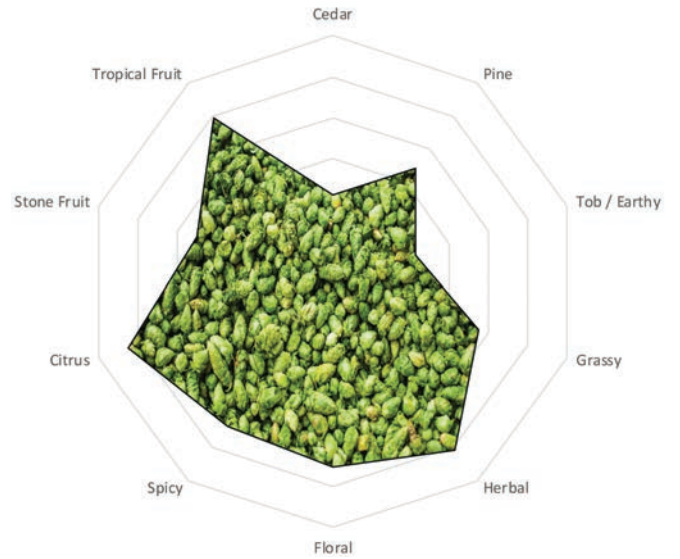
HBC 520 is an early maturing variety with a very unique vanilla and citrus aroma making it exceptionally pleasant.



HBC 522

ALPHA	BETA	CO-H	TOTAL OIL
9.9-11.7%	4.5-5.4%	24.8%	1.4-2.3 ml

HBC 522 is a high yielding selection with a pleasant floral and citrus aroma that is reminiscent of both Cascade and Centennial.



HBC 682

ALPHA	BETA	CO-H	TOTAL OIL
19.4-22%	5.1-5.9%	28.2-31.6%	1.6-2.5 ml

HBC 682 is a "super alpha" variety that often tops out above 20% alpha by cone weight. The pleasant aromatics, which when combined with a smooth bittering profile make it a very versatile hop. Growers will like that it is late maturing and powdery mildew resistant.



HBC 692

ALPHA	BETA	CO-H	TOTAL OIL
8.9-10.4%	8.1-10.2%	37.6-39%	3.6 ml

HBC 692 is a very pungent and impactful hop. It brews like it smells, which means juicy, grapefruit, tropical with herbal (sage/rosemary) notes. This is an exciting hop!



INTRODUCING SABRO™ BRAND HBC 438

THE NEWEST RELEASE FROM HOP BREEDING COMPANY



Presenting

SABRO™

HBC 438



FROM THE CREATORS OF CITRA® AND MOSAIC®

FLAVOR CHARACTERISTICS

Notable for its complexity of fruity and citrus flavors. Distinct tangerine, coconut, tropical fruit, and stone fruit, with hints of cedar, mint, and cream.

TOTAL OIL

2.5-3.5 ml / 100g

ALPHA ACIDS

12-16%

PEDIGREE

Result of cross pollination of a female *neomexicanus* hop.

BREWING PERFORMANCE

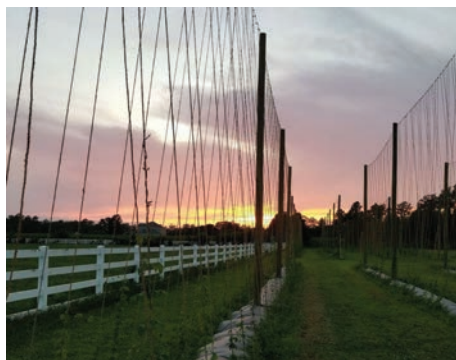
With a robust brewing performance, Sabro™ proves to be a strongly expressive hop which translates its flavor incredibly well into beer.

For more information, visit: www.hopbreeding.com or email info@hopbreeding.com.

To purchase SABRO™ brand HBC 438 hops please contact:
Yakima Chief-Hopunion www.ychhops.com or John I. Haas www.johnihaas.com.

STEWARDSHIP

OUR FOOTPRINTS™ IN THE COMMUNITY



In the spring of 2017 we were contacted by the Landing Zone Grace Warriors Retreat Foundation (LZ-Grace) with a request to support their amazing program. LZ-Grace was established in 2014 in Virginia Beach, VA, to create a peaceful retreat for combat weary warriors and their families. It is a family farm built with the goal of providing a sanctuary for rest, renewal and hope to Special Operations Forces as they transition from combat to life at home. LZ-Grace utilizes recreational based therapies, life skills instruction, and post transition planning to assist with achieving their goal.

One of the many opportunities available to veterans at LZ-Grace is farming, and one of the crops they are cultivating is hops. The One Red Maple Hop Yard initially established as a farming project, will eventually transition to a “for profit” entity to assist with generating funding to support LZ-Grace. The intention is to sell the hops produced at One Red Maple Hop Yard to local breweries, many of which are Veteran owned.

LZ-Grace reached out to Select Botanicals Group to discuss incorporating our aptly named Warrior® hops into their program. We could not have been more honored, and donated Warrior® hops in 2017 to be used by The Young Veterans Brewing Company for brewing a specialty beer. We will be expanding our support for this incredible organization over the next several years, and are humbled by the work they are doing.

“**S**ince its inception, I’ve thought of our hops yard, **One Red Maple Hop Yard**, as a modern day version of the WWII Victory Garden. In my heart I know that the ultimate goal of farming these hops is not in the growing or harvest, but in the hands-on cultivation and perfection of hope in war weary human beings.”

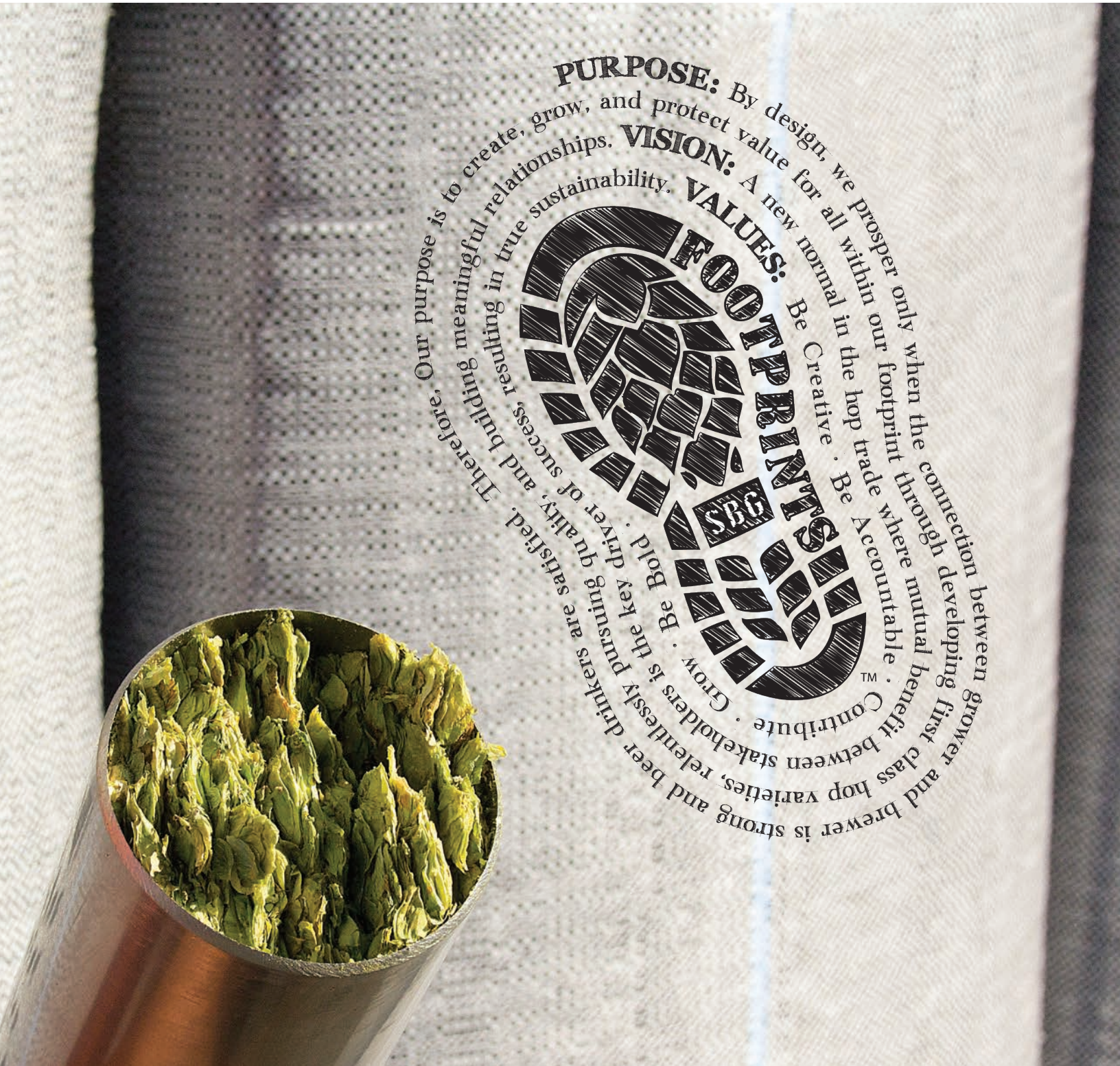
- **Lynnette Bukowski**
Founder, LZ-Grace

For more information, please visit <http://LZ-Grace.com> and <http://yvbc.com>.



SELECT BOTANICALS G · R · U · P

11051 Lateral A
Toppenish, WA 98948



PURPOSE: By design, we prosper only when the connection between grower and brewer is strong and beer drinkers are satisfied. Therefore, our purpose is to create, grow, and protect value for all within our footprint through developing first class hop varieties, relentlessly pursuing quality, and building meaningful relationships, resulting in true sustainability.

VISION: A new normal in the hop trade where mutual benefit between stakeholders is the key driver of success, resulting in true sustainability.

VALUES: Be Creative · Be Accountable · Contribute · Grow · Be Bold · Be Relentless