

# FOOTPRINTS®

AHTANUM® CITRA® EKUANOT® LORAL® MOSAIC® PAHTO™ PALISADE® SABRO™ SIMCOE® WARRIOR®



*Annual Report 2019*



*We* are pleased to present our 2019 annual FOOTPRINTS® report. Yakima Chief Ranches remains focused on our stated purpose to create, grow, and protect value for all within our footprint by developing first class hop varieties, relentlessly pursuing quality, and building meaningful relationships. This edition showcases the importance of reinvestment by our growers as they pursue growing the highest quality hops for brewers world-wide. Additionally, we are highlighting two key components of Yakima Chief Ranches: our innovative hop breeding, and summer internship program.

Modern farmers and brewers are continually faced with rising input prices and tightening regulations, while addressing increasingly complex consumer demands for food safety, quality, and product innovation. These issues are not mutually exclusive. It is therefore critical to generate value in the form of sustainability, providing solutions that can bridge and connect the entire supply chain. Success in this effort requires deliberate alignment with people and companies that recognize the need to generate value and have shared views on what it means to be “sustainable.”

Sustainability becomes a critical foundation when businesses span multiple generations and the product is labor intensive, thrives on healthy soils, and requires a stable supply of clean water. Such is the case with our family farms. To be sure, previous generations did not use the term “sustainability.” Instead it was more likely “survival.” Farm businesses were then, and are still subject to the uncertainties of weather, climate, and fickle markets. Ultimately, sustaining across generations depends on durability, resilience, and willingness to take a calculated risk when needed.

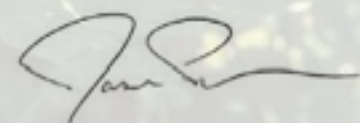
With this in mind, a number that stands out in this report is \$138 million. This is the amount of money reinvested into environmental, food safety, quality, and efficiency improvements over the past seven years by the seven growers in the feature article. This is significant

and unprecedented given the history of the market and represents a significant risk to these businesses. It also demonstrates the growers’ dedication to putting the capital created to work, thereby expanding value for our collective benefit.

Farms today face many of the same challenges of past generations, but they no longer have to do so in isolation. Grower reinvestment is direct recognition of this new normal and confidence in the relationships and transparency that define the Yakima Chief supply chain. It embodies a commitment to sustaining these relationships for future generations of farmers, brewers, and lovers of great beer.

Thank you for taking time to read FOOTPRINTS®. We personally invite you to contact any of our team members with questions or comments.

Sincerely,



Jason Perrault

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## Create

Breeding world-class hops → Providing innovative solutions → Creating **VALUE**



- Developing new novel, disease-resistant hop varieties
- Focused on the alpha, aroma, and agronomics that best serve the needs of brewers and growers



- Ensuring varietal purity, best growing practices, and optimum harvest parameters
- Cost-based returns incentivize continuous investment in quality
- Long-term, data-driven contracting in diversified growing regions

## Grow

Building strong relationships between growers and brewers → Intentional, respectful, responsive, transparent, and mutually beneficial → Growing **VALUE**

# Grower-Owned VALUE CHAIN



## Protect

Brand management program, FOOTPRINTS® → Advancing the industry quality standard → Protecting **VALUE**



- Advocating for the safety of farm workers, facilities, and food-grade processing
- Fostering collaboration and sustainable farming practices
- Annual reports assessing the quality of brands across all farms



- Pest management and harvest record traceability
- Technical process and hop product innovation



- Connecting family hop farms with the world's finest brewers

*Yakima Chief Ranches is a grower-owned, integrated botanicals and brand-management company, specializing in breeding innovative and renowned hop varieties as well as hop farming best practices.*

*In partnership with Yakima Chief Hops we designed a grower-owned value chain that creates, grows, and protects value to meet the long-term needs of all stakeholders.*





# REINVESTMENT

Yakima Chief Ranches works with 45 growers in the Pacific Northwest. Despite only representing a fraction of the on-farm reinvestment that has taken place over the past several years, the seven farms featured here have collectively invested over \$138 million in their operations over the past seven years.



*The* ultimate goal of the FOOTPRINTS® management program is to create, grow, and protect value for everyone from hop breeders and farmers to brewers and beer drinkers. When a brewer opens a package of hops that have come through the FOOTPRINTS® program, they are opening a promise from our growers, our employees, and our partners at Yakima Chief Hops that we have done everything in our power to deliver the best to their brewery. The substantial infrastructural reinvestment of capital by our growers into their facilities is a major component of producing the highest quality hops available.

The Yakima Chief supply chain returns significantly higher revenue per acre to growers than the industry average. These returns are designed to pay for growing high quality hops, reinvesting in facilities and personnel, and maintaining fair profit margins. There are many different ways that growers are reinvesting in their facilities, and as they continue to improve their quality and capacity, they are offered more acreage of YCR managed brands. To illustrate the scope of reinvestment in their operations, several growers were gracious enough to share their recent investments.

Their stories highlight how influential the bonds between growers and brewers have become. The vitality of each industry will forever rely upon the other. In order to meet the needs of the craft industry, our growers' reinvestments will provide true sustainability for generations.



## Oasis Farms - Prosser, Washington

YCR had its first meeting with Oasis Farms, Inc. in late 2014. At that point, the farm had a grand total of 130 acres of hops. In our first meeting, Brenton Roy, President of Oasis Farms indicated that his farm was strongly considering getting out of hops. “We were considering exiting because of the historical volatility of the market, and we weren’t built for growing our hop operation; we had weak hop management and outdated facilities, and we didn’t see how we could stay in it anymore.” After that meeting, Oasis Farms decided to double down and build up a world class hop operation, in smart incremental improvements. “We saw an opportunity in the Yakima Chief supply chain not to just stay in the industry, but to come back in and build our team up to be the best.”

Oasis Farms committed to invest, at a minimum, \$1,000,000 per year of capital in to the operation, and slowly build up to produce the highest quality of hops. Roy, who was named the 2015 Good Fruit Grower ‘Grower of the Year,’ is no stranger to producing high quality agricultural products. Since 2014, Oasis Farms has done exactly what they have said, not only investing in infrastructure and the best possible growing sites, but also in new people. “You can buy any machinery you want, but if you don’t have the right people, it won’t work; you have to have the right people in place to get the job done, and that’s just what we’ve done,” he said. When asked why Oasis Farms has committed to reinvesting at the level they have, Roy said, “It’s the structure of the auto-renewing contract, it’s the revolutionary transparency of the Yakima Chief program. In four generations of farming hops, nobody in our family had ever been inside a brewery to meet with brewers until we grew for Yakima Chief.” Those relationships that have been developed with brewers are driving quality forward. “The word ‘quality’ has been thrown around for years, but it has never been shown to be that important until this relationship started. The connection with brewers has been impactful, knowing the importance of executing quality for them.”

### RECENT INVESTMENTS

- New kiln floors
- New drying technology for moisture measurement
- New burners and fans
- Converted from diesel to propane
- Expanded cooling facilities
- New balers
- Picking machine upgrades and updated building for picking operation
- Hired several key employees, including hop operations manager, quality manager, apprentice, and hop mentor

### RECENT INVESTMENTS

- Land purchases and leases
- Trellis
- Irrigation systems
- Updated kiln, including two new rooms and all new blowers
- New baler
- State-of-the-art drying system
- Cold storage
- Several key employees, including HR manager, agronomist, quality and logistics manager

## Sodbuster Farms - Salem, Oregon

### QUALITY AWARD RECIPIENT

As President of Sodbuster Farms and co-owner of Yakima Chief Hops, Doug Weathers has long appreciated his close relationships with brewers. The time he has spent with these brewers has enabled him to take a holistic approach to his operation, focusing on food safety, building a culture of excellence and quality with his team, and improving infrastructure all at the same time. “Our relationships with craft brewers and our next generation coming back to the farm has brought a new focus on systems, culture, food safety, and new ideas,” says Weathers. In total, Sodbuster Farms has invested over \$15 million in land, trellis, more efficient irrigation, facilities, and people since 2012. “The relationships that have been developed, and future relationships that will be developed drive Sodbuster Farms to continuous improvement to push the limits of what is possible for quality, food safety, and sustainability on our family farm.”



### RECENT INVESTMENTS

- New kiln and baling room, both expanded since they were built
- A state-of-the-art picking machine
- Greenhouses
- Updated trellis and new land purchases
- GLOBALG.A.P. Certification
- H2A program, including housing
- Hired new key managers
- New shop
- New for 2019, an additional specialty picking facility scaled for smaller acreage and experimental hops

## Perrault Farms - Toppenish, Washington

### MULTI-YEAR QUALITY AWARD RECIPIENT

In the last seven years, Perrault Farms, Inc. has averaged approximately \$5 million per year in capital expenses in land and facilities, compared to an average of \$150,000 per year in the previous decade. Starting in 2012, they began a complete overhaul of their operation, replacing their kiln, cooling room, and picking machine for the first time in decades, all in the name of quality and a connection to brewers from around the world.

As a founding family in the Yakima Chief supply chain, the importance of connection between grower and brewer is sacred to Perrault Farms. That connection between grower and brewer has given the Perrault family the confidence and conviction to allocate massive resources at improving infrastructure for capacity and quality. “None of this could have happened without the relationships we have with brewers; the branded hops that YCR is known for would have never happened without that connection,” said Steve Perrault, President of Perrault Farms. “The connection that we have with brewers is so much stronger, and much more transparent than it has been in the past. This transparency has driven the farm to do better. We take pride in delivering hops to a brewer that we know, and we can be proud of the quality product we put forth.”

The major investment for Perrault Farms in 2019 is a complete second picking facility that will be used to enhance quality across the whole farm. The machine was designed to improve efficiency and quality by picking fields and brands that are smaller, such as organic hops or Hop Breeding Company experimentals. This level of investment does not come without risks, however, but those are understood by the Perrault family. When asked about concerns for the future, Jason Perrault, CEO of Perrault Farms said, “For us, this is about generations down the road, not years. We have literally bet the farm on our relationships with brewers (with the substantial long-term debt incurred to reinvest), but the stability that YCH, YCR, and breweries bring gives us the confidence to make that bet.”





## Obendorf Family - Parma, Idaho

### MULTI-YEAR QUALITY AWARD RECIPIENT

The Obendorf family of farms, which includes Obendorf Hop, Central Cove Hop, and Brock and Phillip Obendorf Farms has shown their commitment to quality in a big way. In the last six years, the Obendorf family has spent over \$45 million to make their operation a global leader in hop quality, efficiency, and capacity. "World-class facilities make world-class hops," according to Brock Obendorf, owner of Obendorf Hop. "We wanted to be sustainable long term, a respected operation that is a leader in quality in the hop industry." It seems that this investment is paying off, as these farms have been awarded with several Yakima Chief quality awards in the past couple of years.

Obendorfs, along with many other farms, have incurred substantial debt loads to produce that quality, and they are putting a healthy amount of trust in the long-term stability of the grower-brewer relationship. "We are currently investing all of our profits in the operation. It will take us 10 years to pay off these investments, but we know that we have to keep reinvesting every single year to meet the quality demands of the industry."



## Carpenter Ranches - Granger, Washington

### FIRST-TIME QUALITY AWARD RECIPIENT

After several difficult years in the hop industry, there was not much capital to reinvest in operations. In the early 2010s, the quality of hops coming off of Carpenter Ranches was not keeping up with peer farms that had been able to reinvest. The Carpenter family put together a multi-year plan to improve quality, efficiency, and throughput. As brewers visited the farm each year, pressure to improve facilities and quality mounted, and when the Carpenter family was able to deploy the capital needed to make the jump, they went all in. Over a two-year period, they invested millions of dollars in new kilns, cooling rooms, and cold storage that would catapult them into the upper levels of quality in the Yakima Chief supply chain. In addition to facility reinvestments, they have also invested heavily in new picking technology that will dramatically improve efficiency and quality on the farm. "Without the returns that are provided from Yakima Chief, we wouldn't be able to invest in the quality that we have," says Brad Carpenter, owner of Carpenter Ranches. "With the relationships we have with brewers, and with those returns, we can think about how to improve every day to support those that use our products." He added, "It is so satisfying to drink a great-tasting product that is brewed with our hops."

In 2018, the first year with their new kilning operation on line, Carpenter Ranches improved quality ranking more than any grower in program history in a single year.

### RECENT INVESTMENTS

- 2 new picking machines
- 2 new kilns and baling rooms
- Updated picking machine and kilns in existing facility
- Several new key managers, including CFO and agronomist
- Added H2A program
- In process of GLOBALG.A.P. Certification

### RECENT INVESTMENTS

- 2 new kilns
- 2 new cooling rooms
- 2 new cold storage room
- Investment in devining picking research and development
- Machine upgrades
- Estimated \$5 million in additional updates over the next five years

## C&C Hop Farms - Moxee, Washington

### MULTI-YEAR QUALITY AWARD RECIPIENT

C&C Hop Farms, Inc., which has hop operations in both Moxee and Toppenish, Washington, has a reputation for producing some of the highest quality hops in the Pacific Northwest. Being synonymous with quality hasn't stopped the farm, also an owner in Yakima Chief Hops, from pushing the limits on quality and efficiency. Their picking operations have received major upgrades, if not complete overhauls in the past few years, a testament to both their commitment to continue driving quality and their confidence in the supply chain between grower and brewer. "Being an owner at YCH gets us access to information on global hop markets, which leads to more confidence in our decisions," says Keith Houser, Vice President of C&C Hop Farms. "Because of the transparency that our supply chain offers, it helps growers and brewers to get on common ground so we can understand each other's needs." Because of this transparency, relationships have been developed with breweries that Houser considers friends. "Having those relationships helps give us confidence in the decisions we have made, and pushes us to continue driving quality, which we take pride in." Beyond the personal relationships that C&C Hop Farms has with brewers, Houser is also proud of the breadth of reach that the Yakima Chief connection has with all growers. "It gives us a lot of pride knowing that we are working for the same cause and rowing in the same direction for the benefit of all growers, not just YCH owners."



### RECENT INVESTMENTS

- 2 renovated kilns
- 2 new picking machines
- 1 updated picking machine
- 1 new kiln
- 1 new state-of-the-art cooling room with double balers
- H2A program

## Black Star Ranch - Moxee, Washington

### MULTI-YEAR QUALITY AWARD RECIPIENT

Black Star Ranch, LLC., owned and operated by the Gamache and St. Mary families in Moxee, Washington, is known for their attention to detail. They take pride in being intimately involved with the day-to-day operation of their farm. This close attention to detail has helped Black Star Ranch be recognized as an elite producer of quality hops by brewers and dealers alike, including several awards from YCH. As the craft brewing industry has continued to grow, Black Star Ranch has been diligent about growing at a pace that will allow them to continue to have the personal touch that has made their hops coveted by breweries around the world. They have grown slowly, intentionally, and steadily in the past few years, and have spent tremendous amounts of capital building up their infrastructure along the way. In the past several years, they have renovated their picking machine and added on to their kiln. "We chose to update our facilities for safety, throughput, and capacity. We want brewers to be able to come see what we do in a safe environment. We also needed to make sure that we could have the capacity needed to continue picking hops in the right harvest windows for quality purposes," said Ed St. Mary, General Manager of Black Star Ranch. New to the farm in 2019 will be a massive cooling and baling room. St. Mary added, "The cooling and baling room will allow us to continue our quality and conditioning program at Black Star Ranch."

### RECENT INVESTMENTS

- Updated picking machine
- 2 new kiln rooms
- New cooling room
- Updated trellis and new land
- H2A program
- Updated food safety program







Being a grower-owned company which also enjoys the privilege of working with the finest hop growers in the Pacific Northwest, Yakima Chief Ranches understands the challenges of raising great crops every year. Whether it be water shortages, heat waves, mite outbreaks or mildew spikes, our growers must be nimble in managing a multitude of elements outside their control. That's farming, as they say. So, instead of lamenting what can't be abetted, we prefer to focus on what we can govern.

Starting a hopyard with strong, virus-free rootstock is the most important step in producing quality hops with sustainable yields. Fortunately for all of us, providing virus-free rootstock is something that we can effectively manage every year. However, we must stay vigilant in maintaining clean plants once they are planted.

Despite our united best efforts, plants are extremely susceptible to viral infection. Many common cultural practices can injure a plant, leaving it vulnerable to biotic pathogens. Once a plant is virally infected, it is infected for life, so caution is king.

The following are suggested protocols for protecting your virus-free hopyard against the two most common means by which plant viruses spread: Mechanical Practices and Insect Vectoring.

## *Virus-Free Rootstock*

### **Mechanical (Cultural) Practices:**

- Use new or bleached tools, and a disposable overcoat during propagation.
- Wash hands frequently when cutting, grafting, or propagating.
- Thoroughly clean and sanitize all implements that will be used in fields.
- Remove debris on equipment before using in another field.
- Use new or cleaned tools for stringing, pruning, weeding, and harvesting.
- Plant non-host cover crops.

### **Insect Vectoring:**

- Aggressively manage any outbreaks of insects with piercing sucking mouthparts. Aphids, leafhoppers, whiteflies, mealy bugs, and others in the order Homoptera, are known vectors of viruses.
- Manage against populations of prionus beetle and black vine weevil, as their larval stages feed on rhizomes and expose them to soil borne vectors.





### The Why

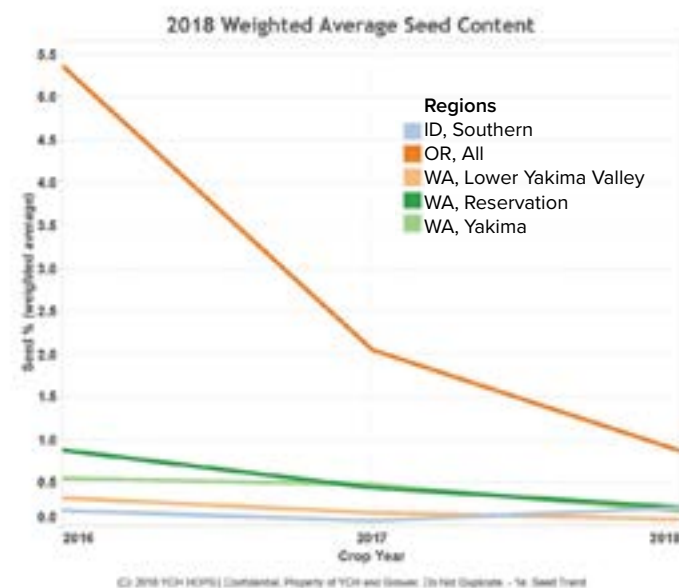
FOOTPRINTS® was created in 2012 as a comprehensive brand management program to ensure that the highest quality hops consistently reach our brewers year after year. Since the program's inception, Yakima Chief Ranches has continued to work with growers to uphold the best crop management practices and maintain varietal purity.

### The What

To sharpen our focus on improving quality in the field, Yakima Chief Ranches established a summer internship program in 2013. Interns contribute to the overall success of YCR's brand management program through data management, soil sampling, and roguing to identify male and off-type plants.

The male plants produce pollen that can result in fertilized female flowers, which will contain seeds. The production of seeded cones can be costly and undesirable for both growers and brewers alike. Seedy cones can affect the weight, the resin within the lupulin glands and the overall quality of the hops delivered for processing. Brewers using hop cones that are seeded can experience unwanted fatty acids in the beer that may cause stability issues and production of off-flavors down the road.

### The Proof - 2018 Results



YCR's concerted efforts aimed at early season roguing for male plants helped make 2018 the first season with ZERO lots rejected due to high seed content. This is an enormous accomplishment, and the interns should be proud of their hard work. The average seed count decreased to under 1% across Washington, Idaho, and Oregon.



2018 interns tour Barley Brown's Beer in Baker City, Oregon

Impressive backgrounds in agronomy, botany, crop science, entomology, food science, genetics, and soil science combined with a collective drive to learn and succeed will make the 2018 class of interns hard to beat.

The interns form an integral component of our operations team, and in 2018 the interns assisted with experimental hop breeding, hop oil maturation studies, dry matter collections, a Pahto™ soil sampling analysis, nocturnal weevil scouting, and various other quality-focused initiatives.

As we look forward in preparation for the 2019 growing season, we also look back in gratitude for the contributions of the magnificent men and women who have shed their actual blood, sweat and tears for the greater good of this company, our industry, and beer drinkers around the world.

- **Elisabeth Darling**  
Entomology Graduate Student  
Michigan State University
- **Lauren Goldsby**  
Cultivation Technician  
Liberty Health Sciences - Gainesville, FL
- **Ethan Howard**  
Brewery Cellar Work, Events, Deliveries  
Stoup Brewing - Seattle, WA
- **Trent Johnson**  
B.S. in Agricultural Systems Management  
University of Idaho - Moscow, ID
- **Rodrigo Perez Plancarte**  
Regional Sales Manager for Mexico and South America  
Yakima Chief Hops - Mexico City, Mexico
- **Sally Sweere**  
Quality Assurance / Quality Control Manager  
Core Brewing Company - Springdale, AK

### Rodrigo Perez Plancarte

*“Being* a Cicerone with a botany degree, learning more about hops seemed like a great way to combine my interests and explore new opportunities outside of Mexico City. The internship at Yakima Chief Ranches caught my eye and while I didn't expect much, I decided to apply.

Before I knew it, I was surrounded by great hops, excellent beer, and friends that became family. The opportunity to travel all around the Pacific Northwest contributing to the quality of the finest hops in the world was equal parts exhausting and enlightening.

Throughout the summer, I was able to meet growers, brewers, and merchants and gleaned so much from all of them. I became excited about the prospects of continuing my career in hops, and was encouraged to pursue positions at Yakima Chief Hops. Despite not having any positions in Latin America, YCH had been growing in the market for years, and were looking for ways to expand their presence.

After completing my time with YCR, I was able to work at YCH during selection and gained a great appreciation for the intricacies of different hop varieties, and the nuanced preferences of brewers. Not long after flying back home, I received a call from YCH's HR department with the news that I had been hired for the newly created position of Regional Sales Manager for Mexico and Central America. I could hardly believe my ears.

I'll never be able to show the gratitude that I have for everyone at YCR and YCH for helping me find this path that I am so passionate about. Working with wonderful people to get the best hops in the world into the kettles of brewers around the world is an amazing privilege! ”

2018 YCR Intern, Rodrigo Perez Plancarte  
Yakima Chief Hops, Mexico City, Mexico







*“In* 2017, I was a recent college graduate and, as it often goes, I had little idea as to what career I wanted to pursue. I knew I thrived in work environments that offered hands on learning opportunities, collaborative mentalities, and passionate personnel. Having worked in agriculture for several years, I was given the opportunity to move to Yakima, Washington for an internship with Yakima Chief Ranches. From the outside looking in, YCR had bred impressively well known hop brands, that any beer drinker would recognize at first glance. But beyond that I knew near to nothing of what the summer ahead would entail. “Bring a pair of good boots” was the best advice Joe Catron, Director of Hoperations, offered before we all geared up to join the Quality Assurance team.

*“The big moment happened that summer when we were able to witness the passion and creativity that brewers have for the product they’re creating, the support they receive from the hop and malt industries, and the excitement from the consumers.”*

During my time with YCR, our team walked hundreds of miles worth of hop rows throughout the Pacific Northwest in search of male plants and diseased plants. We learned about the challenges that growers are facing, we learned to brew beer with experimental varieties and all-in-all came to appreciate the incredibly hard work that the hop industry and YCR does to produce products that are unique and coveted worldwide. The team at YCR is humble, passionate, intelligent, and resourceful. They provide an environment for invaluable in-field education for their interns and for anyone who happens upon their valley that houses fields of hops as far as the eye can see. One of the most helpful aspects of the internship for me personally was the foundation that YCR creates for career building connections. Every day, we were given the opportunity to meet with hop growers, breeders, suppliers, maltsters, and most valuable for me was the opportunity to meet brewers. Before this internship, brewing was never truly on my radar as an achievable career. I had home brewed in college, and was a fierce craft beer lover.

Now, as a brewer in Portland, Oregon, a mecca of great beer, I often refer back to the tools that YCR gave me during my time as an intern. My career in brewing is young but I came into the craft beer industry with a true love and appreciation for the hop industry. My base sensory knowledge was in hops, my base brewing knowledge was focused on experimental hop varieties, and my biggest cheerleaders are the YCR 2017 intern team, appropriately self-proclaimed the “hop cops.” I find the craft beer industry to be wonderfully collaborative, and I attribute the brewing knowledge I have learned to the welcoming environment that it provides. I have grown immensely into my position as a brewer and have now traveled and had opportunities to brew internationally, but I am most excited for future brews and the new learning opportunities. With organizations like Pink Boots and SheBrew I have found my voice and have gained even further support in the industry.


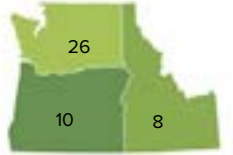



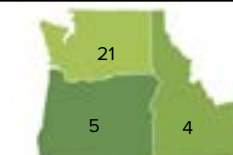
I am proud to be part of a community of dedicated and hardworking women that are challenging issues in a male dominated field, inspiring the future of craft beer to be as inclusive as possible, and are creating really good beer. This year, for the 2019 SheBrew Festival, and in celebration of international women’s day, I brewed a honey pale ale and in appreciation of YCR, I used Loral® (HBC 291) hops both hot and cold side. Thank you for everything YCR! ”


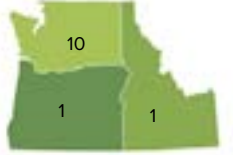
2017 YCR Intern, Lauren Yap  
Base Camp Brewing Company, Portland, Oregon


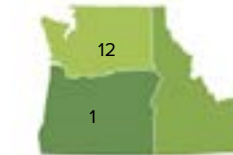




# BRANDS



HOP BREEDING COMPANY		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		
TOTAL BY STATE - ACRES / LBS							
YCR GROWERS # OF FARMS / STATE		WASHINGTON		IDAHO		OREGON	
	2019	Conventional	Organic	Conventional	Organic	Conventional	Organic
	ACRES PLANTED	3,610	124	590	60	616	0
	PRODUCTION GOALS	5,590,029	121,444	893,987	56,516	1,015,922	0

HOP BREEDING COMPANY		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		
TOTAL BY STATE - ACRES / LBS							
YCR GROWERS # OF FARMS / STATE		WASHINGTON		IDAHO		OREGON	
	2019	Conventional	Organic	Conventional	Organic	Conventional	Organic
	ACRES PLANTED	1,910	65	326	33	327	0
	PRODUCTION GOALS	4,252,383	71,022	745,142	34,522	801,943	0

HOP BREEDING COMPANY		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		
TOTAL BY STATE - ACRES / LBS							
YCR GROWERS # OF FARMS / STATE		WASHINGTON		IDAHO		OREGON	
	2019	Conventional	Organic	Conventional	Organic	Conventional	Organic
	ACRES PLANTED	423	15	0	5	20	0
	PRODUCTION GOALS	1,014,468	12,000	0	4,000	48,000	0



HOP BREEDING COMPANY		RELEASE DATE 2018					
	Primarily delivers bitterness with a mild aroma - Herbal • Earthy • Floral						
	ALPHA	BETA	CO-H		TOTAL OIL		
	17-20%	4.5-6%	28-32%		1.0-2.5 ml		
TOTAL BY STATE - ACRES / LBS							
YCR GROWERS # OF FARMS / STATE		WASHINGTON		IDAHO		OREGON	
	2019	Conventional	Organic	Conventional	Organic	Conventional	Organic
	ACRES PLANTED	1,073	0	0	0	35	0
	PRODUCTION GOALS	2,605,320	0	0	0	70,000	0


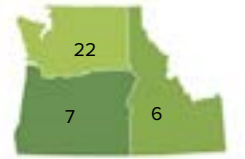
HOP BREEDING COMPANY		RELEASE DATE 2016					
	Floral • Citrus • Peppery • Dark Fruit						
	ALPHA	BETA	CO-H		TOTAL OIL		
	11.3-12.2%	4.9-5.4%	21-24%		1.8-2.9 ml		
TOTAL BY STATE - ACRES / LBS							
YCR GROWERS # OF FARMS / STATE		WASHINGTON		IDAHO		OREGON	
	2019	Conventional	Organic	Conventional	Organic	Conventional	Organic
	ACRES PLANTED	82	0	0	0	0	0
	PRODUCTION GOALS	196,800	0	0	0	0	0


HOP BREEDING COMPANY		RELEASE DATE 2018					
	Tangerine • Coconut • Tropical Fruit • Stone Fruit • Cedar • Mint • Cream						
	ALPHA	BETA	CO-H		TOTAL OIL		
	12-16%	4.5-6.5%	21-25%		2.5-3.5 ml		
TOTAL BY STATE - ACRES / LBS							
YCR GROWERS # OF FARMS / STATE		WASHINGTON		IDAHO		OREGON	
	2019	Conventional	Organic	Conventional	Organic	Conventional	Organic
	ACRES PLANTED	320	20	20	5	0	0
	PRODUCTION GOALS	502,276	16,000	28,000	4,000	0	0




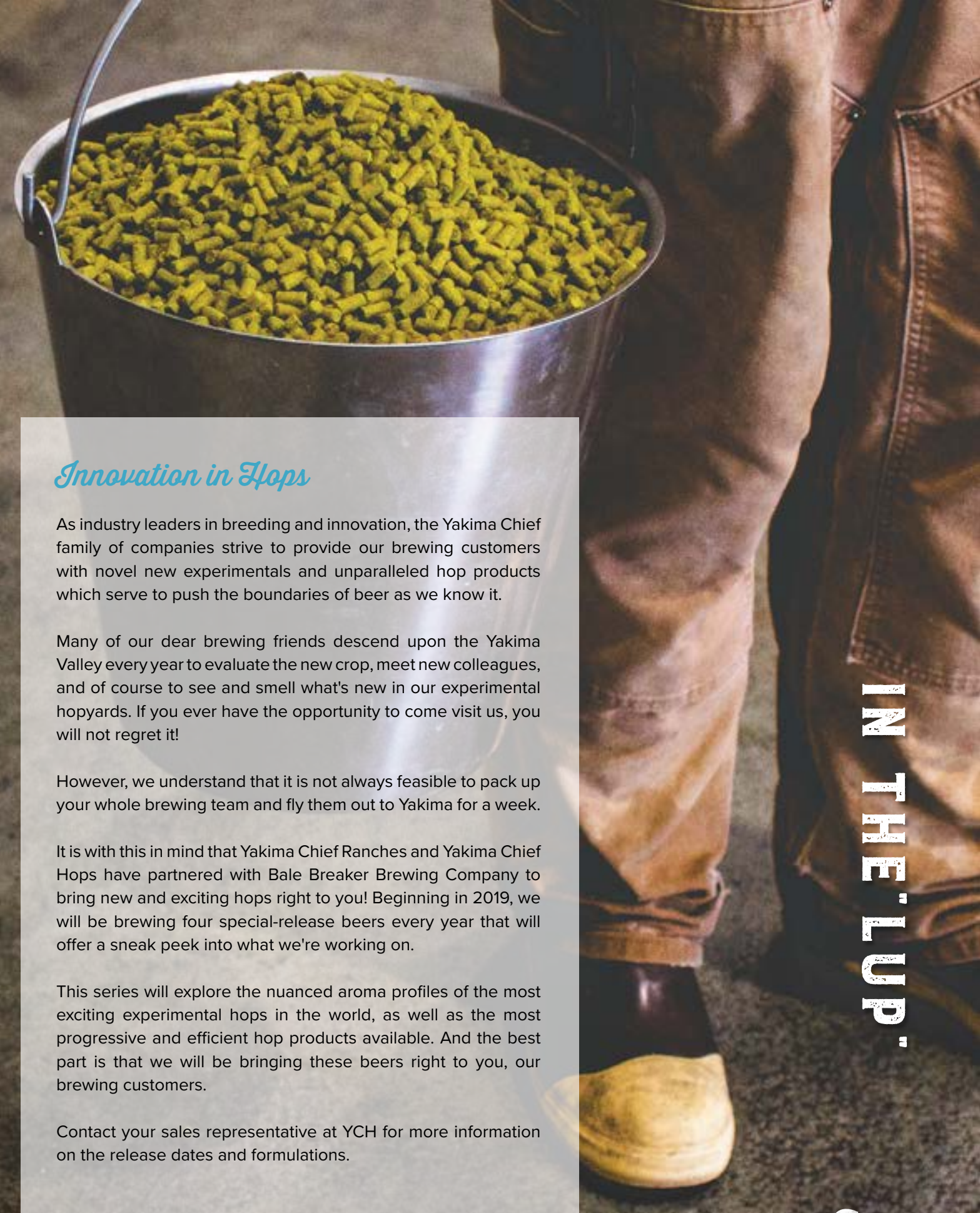
# BRANDS

YAKIMA CHIEF RANCHES		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	
TOTAL BY STATE - ACRES / LBS							
YCR GROWERS # OF FARMS / STATE		WASHINGTON		IDAHO		OREGON	
	2019	Conventional	Organic	Conventional	Organic	Conventional	Organic
	ACRES PLANTED	259	0	0	0	0	0
	PRODUCTION GOALS	622,248	0	0	0	0	0

YAKIMA CHIEF RANCHES		RELEASE DATE 2000					
		Piney • Citrus • Passion Fruit • Earthy					
		ALPHA	BETA	CO-H		TOTAL OIL	
		12-14%	4-5%	15-20%		2-2.5 ml	
TOTAL BY STATE - ACRES / LBS							
YCR GROWERS # OF FARMS / STATE		WASHINGTON		IDAHO		OREGON	
	2019	Conventional	Organic	Conventional	Organic	Conventional	Organic
	ACRES PLANTED	3,441	45	440	7.0	466	0
	PRODUCTION GOALS	5,196,755	56,730	656,000	8,432	710,528	0

YAKIMA CHIEF RANCHES		RELEASE DATE 2003					
		Apricot • Grass • Star Fruit • Floral • Spice					
		ALPHA	BETA	CO-H		TOTAL OIL	
		5.5-9.5%	6-8%	24-29%		1.4-1.6 ml	

YAKIMA CHIEF RANCHES		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	



## Innovation in Hops

As industry leaders in breeding and innovation, the Yakima Chief family of companies strive to provide our brewing customers with novel new experimentals and unparalleled hop products which serve to push the boundaries of beer as we know it.

Many of our dear brewing friends descend upon the Yakima Valley every year to evaluate the new crop, meet new colleagues, and of course to see and smell what's new in our experimental hopyards. If you ever have the opportunity to come visit us, you will not regret it!

However, we understand that it is not always feasible to pack up your whole brewing team and fly them out to Yakima for a week.

It is with this in mind that Yakima Chief Ranches and Yakima Chief Hops have partnered with Bale Breaker Brewing Company to bring new and exciting hops right to you! Beginning in 2019, we will be brewing four special-release beers every year that will offer a sneak peek into what we're working on.

This series will explore the nuanced aroma profiles of the most exciting experimental hops in the world, as well as the most progressive and efficient hop products available. And the best part is that we will be bringing these beers right to you, our brewing customers.

Contact your sales representative at YCH for more information on the release dates and formulations.

IN THE LUP.





## Hops on the Horizon

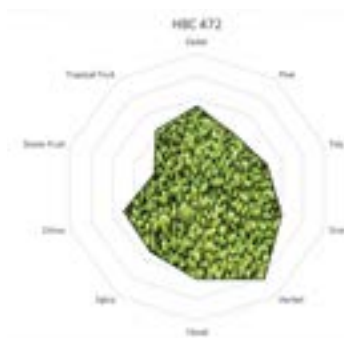
Since the 1990s Yakima Chief Ranches has been on the cutting-edge of hop science. Now through our partnership in Hop Breeding Company we continue the mission of developing pest and disease-resistant hops with strong commercial qualities.

Breeding hops is a 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.

Jason Perrault, the YCR team, and brewers throughout the world have been working together to develop new hop varieties that have and will continue to revolutionize hops and beer. This year's Pipeline Report includes data on the newest hop varieties. We are seeking input from our brewing partners on how these varieties might influence the future of beer.

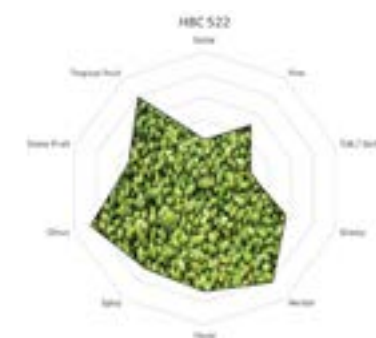


HBC 472			
ALPHA	BETA	CO-H	TOTAL OIL
7.5-9.6%	7.1-8.8%	46.8-48.7%	1.4-1.9 ml



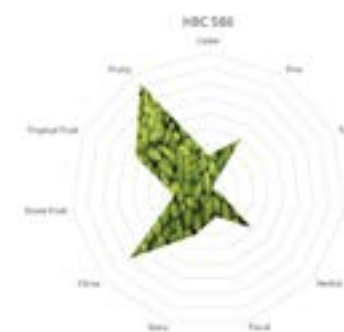
- Progeny of a *neomexicanus* mother
- Unique aroma with pronounced vanilla, coconut, and bourbon barrel characters
- Late maturity fits into current picking windows

HBC 522			
ALPHA	BETA	CO-H	TOTAL OIL
9.9-11.7%	4.5-5.4%	24.8%	1.4-2.3 ml



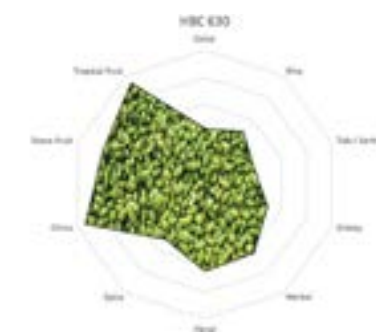
- High yielding selection
- Pleasant floral and citrus aroma
- Reminiscent of Cascade and Centennial

HBC 586			
ALPHA	BETA	CO-H	TOTAL OIL
13%	8%	38-40%	2.5 ml



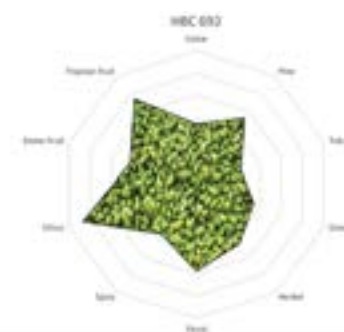
- Fruit medley of guava, mango, and lychee
- Strong yielding aroma variety
- Citrus and herbal undertones

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



- Distinct candy-like aroma - think Cherry Ludens
- Tropical fruit notes
- Aromas translate nicely into beer

HBC 692			
ALPHA	BETA	CO-H	TOTAL OIL
8.9-10.4%	8.1-10.2%	37.6-39%	3.6 ml



- Very pungent and impactful hop
- Brews like it smells - juicy, grapefruit, tropical with herbal (sage/rosemary) notes







**YAKIMA CHIEF**  
*Ranches*



**YAKIMA  
CHIEF**  
**- HOPS -**

We believe in partnering with grower-owned companies to connect our hops to brewers around the world. Yakima Chief Hops is our handler and distributor of choice. For information on hop availability and contracting, visit [YakimaChief.com](http://YakimaChief.com).