



The cones develop into small pinecone-shaped bundles of hop goodness.

# A YEAR IN THE LIFE OF A HOP

BY CATIE JOYCE-BULAY



DRIVE THROUGH PARTS of Washington's Yakima Valley and you'll see row upon row of 20-foot poles as far as the eye can see. At the height of summer these towering columns will be covered in bright green. This is the hops plant. No other crop is grown or harvested quite like it.

## SPRINGING TO LIFE

"It's a unique plant," said Martin Ramos, ranch manager at Segal Ranch. "When you're growing ... each [variety] has its own likes and dislikes, the way you approach growing throughout the year. And every year, it's a little different as well." Ramos, who has worked with hops for more than thirty years, has managed John Segal's 470-acre third-generation hop farm for the past seven years.

In the spring, Ramos prepares the perennial plants, which laid dormant all winter, for the growing season. They will begin to sprout new growth in late February and early March, and then need to be pruned.

After the vines, called bines, have reached about 1 to 2 feet tall, they will begin to collapse if not tended. So Ramos and his crew begin training the bines around strings to reach toward the trellis almost 20 feet above. "You have to wrap them clockwise. They will unravel if you don't," he said. "They say that in the southern part of the world you have to wrap them the other way around, but I don't know if that's true."

This process takes between thirty and forty people tying each group of three to four bines by hand, and goes on for about two weeks, at least six days a week. "It's very critical we get it right, very labor intensive, I







## GET TO KNOW YOUR PNW HOPS

- The female hop produces the cones used in beer. The male is only needed for propagation.

- Hops serve a few purposes in beer—acting as a preserving and bittering agent against the sweetness of malt (usually called alpha, kettle or bittering hops), as well as flavoring, typically added near the end of a brew (usually called aroma hops). Some hop varieties are used for both bittering and aroma.

- 75 percent of the United States' hops acreage is in the Yakima Valley.

- Popular varieties grown in the Pacific Northwest include Cascades, Centennial, Crystal, Chinook, Nugget, Willamette, Fuggle, Mt. Hood and Sterling.

- John Segal's father, John Sr., is credited with the first commercial cultivation of the Cascades variety, which played an important role in showing the world American aroma hops can stand up to their European cousins.

- Denali and Eureka are the latest hop varieties developed at Hopsteiner. Nicholi Pitra re-discovered Eureka in the "museum field," where varieties that don't make the initial cut go to retire.

would say just as much as harvest," Ramos said. They go back over the rows once or twice more to make sure they are secure. Then the bines are ready to take off on their own.

## REACHING TOWARD THE SUMMER SUN

The summer's long growing days and the fertile soil of Eastern Washington's Yakima Valley nurture each of the ten varieties Segal Ranch grows. Under favorable conditions some can grow as much as 1 to 2 feet per day toward their final height of about 18 feet by early July. While the hops reach skyward, the farmer's focus is on keeping the crop growing strong with weed and pest control and irrigation.

Down in Oregon's Willamette Valley, another hops hotspot, Goschie Farms near Silverton has been growing hops since 1904. Today, the farm grows ten varieties on 500 acres, along with wine grapes, some rotational vegetable crops and, begun last year, a test crop of malted barley, another essential beer ingredient.

The fourth-generation family farm was the first Salmon Safe-certified hop farm in the country, which means the way it tends weeds and pests and how it uses water may differ from other farms. Going Salmon Safe didn't greatly change its growing practices, since Goschie Farms had always been conscious of soil and stream health. Along with avoiding harsh chemicals, the farm uses drip or micro-irrigation which, unlike sprinklers, only waters the plant and not the area around it. This not only reduces water use, but also cuts down on added humidity caused by water evaporation in sprinkler use, which in turn helps combat disease and mildew—hops' worst enemy.

## FALL HARVEST

From late June to late July, depending on the location and variety, the hop bines begin to grow their cones, the hop flower, and are ready to harvest in late August. Harvest continues for about a month and runs day and night. Day length determines when to harvest. Hops are ready a bit earlier in Yakima Valley because they are exposed to more sun over slightly longer days.

"Mother Nature has a set process of month-

by-month how long our days are, so that triggers a hop plant to do the different processes during the growing season," Gayle Goschie said. "I can sit here in January and February, and I can almost tell you exactly what day we're going to be harvesting a particular variety of hops, because it's pretty much the same day every year."

But the difference of a few days can really matter in terms of quality. This is where science mixes with a grower's intuition. Tests are run on the cones to determine oil content and the amount of various compounds—these will tell when each variety has reached its peak.

"It's by feel and the variety of experiences you have over the years," said Ramos, describing how he knows when to harvest. The ranch begins testing the cones in each field at least two weeks prior to harvest.

Brewers often visit the fields during this time and may help to determine when a certain variety is ready. Both Segal Ranch and Goschie Farms distribute their hops directly to brewers across the country (Goschie also uses a hops broker for a small portion of the harvest).

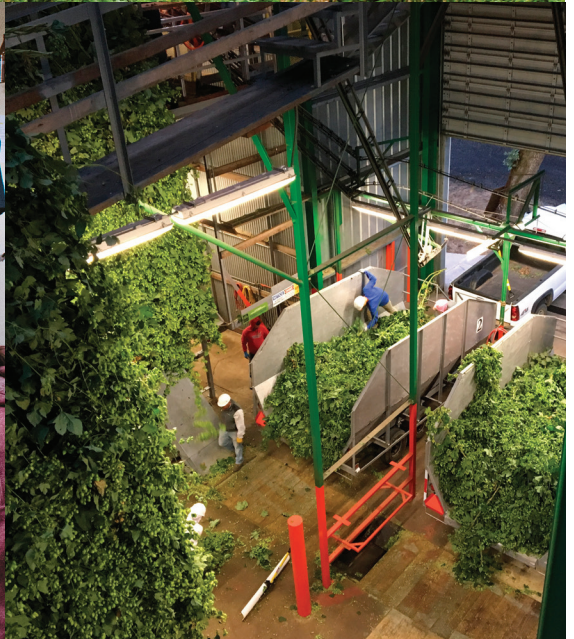
After test results are in, "the brewer and the grower will get down to the age-old time analysis of grabbing the cones in the field, rubbing them between your hands and smelling the aroma," Goschie said. "If the brewer is smelling the aromas to his or her liking, then that could be a determining factor in his or her harvest, which is really cool. As a grower, I find it absolutely fascinating (working with the brewers). I love to have that input."

Once the hops are ready, a machine called a bottom-cutter cuts the bottom of the bines near the ground, then a top-cutter goes through and cuts the top of the bines. From there, the tangle of long bines is taken to a processing facility, where the cones will be removed and dried in a kiln.

Despite the busy nature of it, harvest is often a grower's favorite time of year. "I absolutely love it," Goschie said. "It's the one time of the year where pretty much everything is focused on harvesting the crop, and that's just really cool. The entire farm and the entire staff, that's what we're doing. We worked all year to get the crop to that point."







## HOW A HOP BECOMES A BEER

**TOP ROW, FROM LEFT** Thousands of potential new hop varieties are planted in the greenhouse each spring at Hopsteiner. In early spring, workers tie twine for the hop bines to climb at Goschie Farms. A newly planted Hopsteiner field is manicured, allowing the hops to grow fast and strong.

**MIDDLE ROW, FROM LEFT** Harvest begins at Hopsteiner as harvesters work the fields picking the cones from the hop plant. Brewers smell hops during selection at Segal Ranch, while ranch manager Martin Ramos looks on. Freshly cut from the fields, hop cones hang before being plucked from the bines and heading to the drying floors at Goschie Farms.

**BOTTOM ROW, FROM LEFT** After picking, the cones are sent to a cleaning and drying facility at Hopsteiner. Dried hops are pelletized and held in cold storage until breweries request delivery.

*Photos by: TOP ROW, FROM LEFT CDStuder/Hopsteiner, Goschie Farms, CDStuder/Hopsteiner; MIDDLE ROW, FROM LEFT CDStuder/Hopsteiner, Katie Joyce-Bulay, Don Pettit/Goschie Farms; BOTTOM ROW, FROM LEFT CDStuder/Hopsteiner, CDStuder/Hopsteiner*



**“MOTHER NATURE HAS A SET PROCESS OF MONTH-BY-MONTH HOW LONG OUR DAYS ARE, SO THAT TRIGGERS A HOP PLANT TO DO THE DIFFERENT PROCESSES DURING THE GROWING SEASON. I CAN SIT HERE IN JANUARY AND FEBRUARY, AND I CAN ALMOST TELL YOU EXACTLY WHAT DAY WE’RE GOING TO BE HARVESTING A PARTICULAR VARIETY OF HOPS, BECAUSE IT’S PRETTY MUCH THE SAME DAY EVERY YEAR.”**

**—GAYLE GOSCHIE, GOSCHIE FARMS**



#### **MEET THE GROWERS**



FROM TOP Martin Ramos, Segal Ranch; Gayle Goschie, Goschie Farms; Nicholi Pitra, Hopsteiner

Harvest is a festive time of year. The brewers visiting Segal Ranch have become like family over the years and look forward to a Mexican barbeque during tours of the fields and production facility, before they take part in selection—in which they decide which hop varieties they want and harvested at what time.

“We get over twenty brewers to come over to our farm during hops harvest,” Ramos said. “And they bring their beers. Otherwise I won’t have a chance to try them, because some of them are produced very local, they’re not nationwide. So that’s one of the perks that I have. They are making really amazing beers. We’re very happy to be part of that.”

#### **CRUNCHING NUMBERS IN THE QUIET OF WINTER**

For Hopsteiner scientist Nicholi Pitra, whose official title is molecular breeder and bioinformatician, harvest has a different focus. He is out in the fields determining which crosses have done well and which haven’t.


“Let’s say I’ve crossed a dad who’s resistant to powdery mildew, which is the biggest disease in the Yakima Valley, with a mom who’s not resistant to powdery mildew,” Pitra said. “I go out to my test fields in the fall and I look at which ones have powdery mildew and which ones do not, which ones seem like they’re contenders to be advanced in the breeding program because they’re bigger or maybe have certain favorable chemical traits.”

Pitra has worked in the Yakima Valley for


Hopsteiner, one of the largest hop growers and suppliers in the world, for the past seven years. His job is to develop new hop varieties and find innovations to speed up the development process, which takes between eight and twelve years.

In the winter, while hop farmers are generally slowing down, repairing or replacing equipment and preparing for the next grow season, Pitra is crunching the numbers. “I take all that data and over the winter, I try to make it mean something,” he said. “Groom it, put it into databases, run it through a few models and see if I can find the plants that have maybe some quality that would be a reason I would advance them or cut them from the program.”

Another unique part of Pitra’s job is being on the tasting panel in Hopsteiner’s experimental brewery, where he and other employees blind-taste beers made with his hops that have passed the initial eight or so years of testing. “You’re actually sitting in a white booth, and it’ll get passed to you through a window, so you don’t know it’s yours,” he said.

Hops can be difficult to evaluate in beer because they can be added at different times to the brew for different purposes, and because there are so many different beer styles. Pitra likens hops to paint and the brewers to artists who use the hops as a tool in their creations. The hop farmers then must be part artist and part scientist, using their skills and technology to produce the most vibrant paints. 





By mid-August, hop plants have filled out and started to develop the sought-after hop cones.