

# FEATURED LANDOWNER: TOM AND ANNIE BRITZ



Is growing hops economically feasible in western Montana?

by Pat McGlynn

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Nineteen years ago, Tom and Annie Britz arrived in Montana's Flathead Valley from Vail, Colorado. Settling in the Whitefish area, the Britz's bought their original 10-acre piece of heaven to raise horses and graze a few head of cattle in the summer. Within three years, they acquired an adjacent 10-acre parcel plus an additional 30-acre parcel to both expand cattle pasture and raise forage crops.

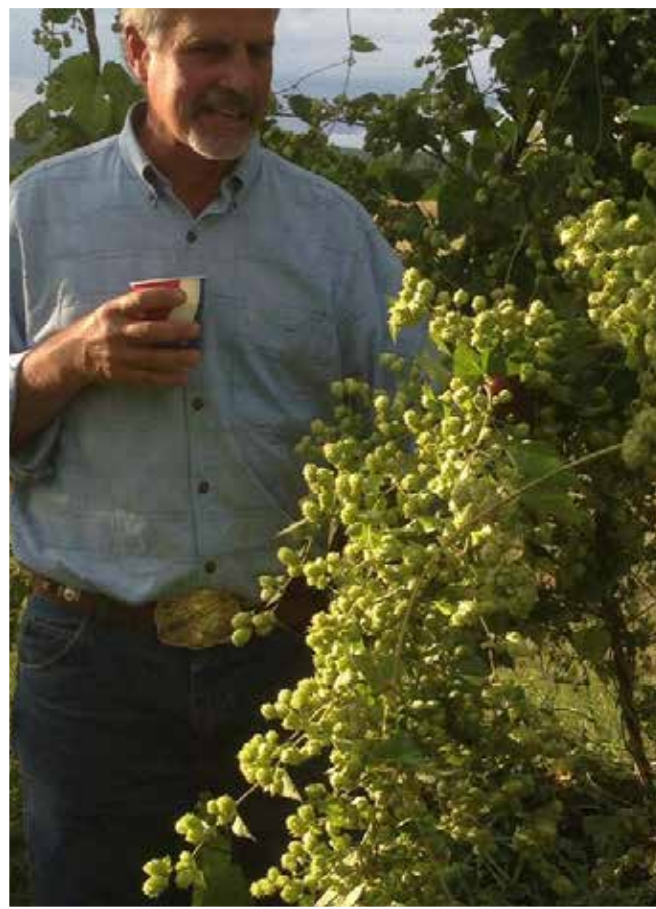
Dissatisfied with the quality of horse hay he was finding on the open market for his own performance horses, Britz

learned how to produce his own hay. Initially he raised hay on the 30-acre parcel. Later when he fenced that parcel to be summer-pasture for yearling cattle, he needed hay for training their performance horses. Tom expanded his haying operation up to as much as 120 additional acres of his neighbor's lands.

Over the course of nearly 15 years, 35 acres of the property had been dedicated to pasturing cattle and horses, and even yaks for a couple of summers, but the land badly needed reworking. In 2012, Britz asked Pat McGlynn, MSU Extension Agriculture Agent Flathead County, about potential alternative crops for this parcel. McGlynn mentioned that she was considering looking at hops as a potential commercial crop in northwestern Montana. The latitude in the Flathead Valley is similar to that of a 1,700-acre hops yard in Bonners Ferry, Idaho, which led them to believe hops could be successful in the area.

Britz admits, to this day, that he thought it was a crazy idea. With his background in marketing, he began conducting his own informal needs assessment, talking to a number of local breweries about the concept. Many in-state brewers he contacted were excited about having access to a potential supply of Montana-grown hops, particularly since Montana is already well-known as a premier malt barley producing state. The initial enthusiasm expressed by these brewers for being able to produce a product with 100% Montana-grown ingredients overshadowed the contrasting negative feedback he received when doing a similar assessment in Washington and Oregon.

**Tom Britz inspecting his hops.**



In 2012, McGlynn and Britz began the project, with McGlynn identifying possible funding sources and Britz developing a formal survey for members of the Montana Brewers Association. The survey included questions about preferred hop varieties, level of demand, and what format breweries would need the hops to be supplied in, such as fresh-picked, dried whole leaf, or pelletized.

Many varieties of hops can grow almost anywhere between the 35th and 55th parallels, but the real challenges were found to be in harvesting and in processing since no specialized hop harvesting, processing, and packaging infrastructure existed anywhere in the state at the time. The hop is a dried cone or “flower.” The cone must be removed from the “bine” (i.e., a twining stem or flexible shoot of a hops plant) and dehydrated within 24 hours to stabilize it and preserve the unique oils and acids needed for brewing. The dried, featherweight cones are then compacted into bales and frozen. Later, bales are broken up to be pelletized (the format used by 98% of all breweries in America) and then packaged in a UV-resistant mylar packaging with a nitrogen flush to remove all the damaging oxygen. Only a small percentage of hops can be used as fresh or “wet” hops by a brewery and that is typically only during harvest season.

In-state craft brewers threw out cautious, yet optimistic support. The burgeoning Montana craft brew industry was able to purchase Montana-grown malt barley for their beer but most hops were obtained from out of state. The Yakima Valley in Washington, has a sunny, semi-arid climate and produces 78% of the U.S. crop, with most of the rest (18%) coming from the Willamette Valley in Oregon. The prospect of Montana-grown hops was intriguing, but with generations of established infrastructure and known quality from those large producing regions, the question came down to “can you produce the same high quality that we can get from existing hop sources today?”

Britz and McGlynn received a grant from the Montana Department of Agriculture’s (MDA’s) Growth Through Agriculture (GTA) program to complete a feasibility study for producing commercial hops. The Tamarack Brewing Company in Lakeside and the Great Northern Brewing Company in Whitefish contributed the matching funds required by the grant toward the first phase of research.

In early spring 2013, Britz worked with his neighbor, Tom Christenson, to prepare and till the land that had been horse pasture. They created an elaborate system of 22-foot larch poles and aircraft cable to support the plants, with concrete anchors set five feet deep in the ground, to secure the trellis system.

In the initial year, Britz planted 17 varieties of rhizomes acquired from sources in Oregon and Washington. Green sprouts began to emerge within 7 days, but only after many laborious hours of hand-watering 800 plants prior to installation of a drip irrigation system. As the plants matured, Britz and a friend, Bart Slaney, tied coconut-husk coir (i.e., a stiff, coarse fiber from the outer husk of a coconut) twine from the top of the trellis cable, secured each twine to the ground, and hand-trained each bine to climb clockwise around each twine to support the highly productive plants. By mid-summer, over 80% of the plants had survived and emerged, but so had years of dormant weed seeds that thrived in the freshly turned soil. The weeds presented a new challenge and controlling them by hand along the 2,500 linear feet of hop rows became a back-breaking chore.

Surprisingly, a limited amount of hops cones appeared the very first season. Staff from Great Northern Brewing Company joined volunteers from the Flathead Home Brewers Association, McGlynn, and Britz to harvest the first hops. Enough hops were harvested from ten of the varieties for home brewers to create single hop brews as a means to test the flavor of the new varieties.

Over the winter of 2013-2014, Britz had time to step back and seek out new resources for help. With hop producers in Washington and Oregon less than enthusiastic to help any potential competing grower, he found a resource in a seemingly unlikely place...Zeeland, Michigan. Great Lakes Hops, and its owner Lynn Kemme, had quietly emerged as one of two privately-held hop research, breeding, and propagation facilities in the U.S., and Kemme was very forthright about sharing his knowledge, earning the title “Hop Jedi” from Britz.

Kemme persuaded Britz to switch from rhizomes to live plant crowns and test additional varieties in the Flathead Valley’s microclimate, ultimately providing 26 new varieties in 2014, which created the largest single varietal field test between

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There are several fungicides that can be used to protect highly susceptible trees such as chokecherry. They must be applied in early spring and, depending on the fungicide used, may not be labeled for fruit trees if you are harvesting the cherries. They also may need to be sprayed every 7-10 days until the middle of summer. Chemical treatments that have been effective on black knot are Captan, Chlorothalonil, Thiophanate-methyl and lime sulfur. Be sure to read the label before using any pesticide.

**Q** Everywhere I look, from lawns to flower beds to vegetable gardens, the recommendation is to irrigate one to two inches per week. How do I measure that?

— *Musselshell County*

**A** Water efficiency will help your plants grow better, therefore, understanding how much water you are applying is important. If you use overhead watering, either with a sprinkler system or a hose-end sprinkler, use a tuna fish can to gauge applications. Common tuna fish cans (or cat food cans), when totally full, are the equivalent of one inch of water. Place several cans randomly around the sprinkler head. Run the sprinkler for a set time and see what the average water depth of water is in the cans. From there, you can adjust your sprinklers accordingly. Remember, depending on your soil's texture (i.e., proportion of sand, silt, and clay), you may need to water more or less frequently and adjust the amount of time the water runs. If you need additional help on how much to water certain plants in your area, contact your local MSU county or reservation Extension agent.

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Yakima and southern Michigan. It became obvious that under the right conditions, hops could be commercially grown in Montana...but then what do you do with them?

The second phase of the project was to acquire a mechanical hops harvester, determine appropriate processing systems and do a comprehensive chemistry analysis on his Montana-grown hops to determine whether the prized acids and oils were at the necessary concentrations. Britz and McGlynn obtained additional grant funds from the MDA's GTA program for the next phase of the project. After months of research by Britz, a refurbished, German-built Wolf harvester, which came off a small farm in Bavaria, was chosen for a harvesting machine. After a two-month complete refurbishment, it was cut in half, put in a high-capacity container, and shipped halfway around the world.

Once the machine was in Montana, the two main sections had to be re-assembled on a specially-built concrete pad designed to hold the 10,000-pound machine. Lacking an English-language instruction manual, Slaney managed to weld it back together and get it operational just in time for the second season harvest. Britz named the behemoth, Hildegard, after his great aunt in Minnesota. A majority of the 2014 harvest was used in fresh hop seasonal ales at Great Northern Brewing and Tamarack Brewing, all of which were sold out before the end of Montana's general hunting season.

The feasibility of a commercial hops industry is looking very positive for northwestern Montana, but many challenges remain to be tackled before commercial production can commence. Will Montana eventually have the complete infrastructure in place to support an in-state commercial hop industry? It's not black and white yet, but there is guarded optimism that the stiff challenges will eventually be surmountable.

