

FIELD
TESTED



Hop Yard Weed Fabric



Field Tested is a series of reports about farm tools that have been tested by Montana farmers to enhance their specialty crop production. The reports describe these farmers' findings to help others make informed decisions about their specialty crop businesses. Visit FarmLinkMontana.org/fieldtested to read more Field Tested reports. This project is administered by the Community Food & Agriculture Coalition with funding from the Montana Department of Agriculture Specialty Crop Block Grant Program.

BELL CROSSING FARMS | STEVENSVILLE



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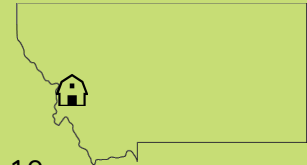
Bell Crossing Farms Snapshot

Location: Stevensville, MT

Operators: Desiree &
Steve Funston

Acres: 1 acre, expanding to 10

Crops: CTZ & Cascade Hops



INTRODUCTION

Bell Crossing Farms broke ground in 2017 to grow hops for Montana's craft brew industry. Steve and Desiree Funston began researching hops production in 2013, traveling to farms across the Rocky Mountain region, before designing their production system for their Stevensville site. As part of a new wave of hops growers in Montana, they plan to share what they learn and determine the efficacy of weed cloth, perennial cover cropping and drip irrigation in this region.

BELL CROSSING FARMS LLC.

Bell Crossing Farms, LLC is owned and operated by Steve and Desiree Funston. They farm on an 11-acre parcel outside Stevensville, in the Bitterroot Valley. The Funstons plan to eventually grow

hops on 10 acres by slowly scaling their production over the first few years. They planted one acre of hops in year one, and an additional acre in year three.

The hops will be sold to Montana breweries and the Funstons have selected common varieties with application for brewing a wide array of beer styles. Initial plantings include CTZ and Cascade. Season one production exceeded expectations with CTZ and Cascade producing .75 lb. and .5 lb. of wet hops per plant, respectively. Wet hops being the crop before drying. This allowed the farm to begin marketing outreach, providing large enough samples of fresh hops that a local brewery made a “Bell Crossing Fresh Hop Ale”.



HOP YARD INFRASTRUCTURE

At Bell Crossing Farms, hops are grown in three foot wide beds on a standard tall trellis. Well water is delivered via a drip irrigation system and aisles are planted with cover crops to develop soil and compete with weeds.

Trellis poles are untreated wood with an expected lifespan of five years in the hop yard. As production expands, new trellis will be built using drill steel that has been retired from oil drilling operations. Drill steel posts have an extremely long lifespan, though can present a higher lightning risk in the yard. At, Bell Crossing, the anchoring system grounds the posts eliminating this concern. Using both materials side-by-side, the Funstons can compare their performance over time.

Hops were planted from rhizome in one-square-foot planting holes in 3' wide woven weed fabric. The weed fabric reduces weed competition and cultivation time (see picture in next section).

Supplies

- 4 1/2-5" X 24' Wood Poles
- 4.8 oz Woven Weed Fabric, 3' wide
- Fabric Staples
- Hops Rhizomes
 - 260 var. Cascade
 - 240 var. CTZ

A drip irrigation system delivers well water at the rate of one gallon per hour via a single emitter positioned at each planting hole. During the first season, irrigation is run for one hour, twice per day for a total of two gallons per plant per day.

Weed Fabric



The woven weed fabric reduces the weed competition for the hop plants, while also reducing the amount of time spent cultivating. In Desiree's words, "The weed cloth is great. I would much rather pluck a couple of weeds out of 504, one-square-foot planting holes once in a while than spend the entire season weed whacking 2,200 linear feet of three-foot-wide planting beds."

When the hop vines are trained to the trellis strings in the spring, weed fabric reduces the amount of tangling with weeds. While the Funstons found the job proceeded quickly, Desiree plans to use five foot wide fabric on future plantings to further reduce weed encroachment.

Note the encroachment of the clover cover crop on the 3' wide fabric late in the season.



UNEXPECTED YIELDS

It is recommended to plan for no yield in the first season of a new hop yard. The hops plants spend this year establishing roots and building a foundation for upcoming seasons. At Bell Crossing, the vines produced enough, in their first season, for the Funstons to supply two local breweries for batches of fresh hop beers. While it is not possible to determine the degree of impact from each factor, the Funstons cite, soil health, cover cropping, drip irrigation, weed fabric, and the weather as factors in their unexpected production.

OTHER OBSERVATIONS

When they first received the rhizomes, the CTZ looked much healthier than the Cascade. The Cascade, however, survived transplanting at a better rate with 97% surviving, compared to 93.8% of CTZ coming up after transplant. Overall the farmers are pleased with a 95.6% success rate for transplanting overall.

Farming on a new site, the Funstons had a well drilled the pump had to be connected to the local power supply. It took 17 weeks for the farm site to get power after the farmers contacted their local utility, which delayed the installation of drip irrigation. Desiree recommends, “Start earlier on utility installation, because it's gonna take longer than you think.”



CTZ rhizomes show much more growth upon arrival from the nursery.



Cascade rhizomes were less developed, but caught up in the field.



Additional Resources

High Wire Hops in Paonia, CO provided valuable advice on hop yard infrastructure.

Montana Department of Agriculture Specialty Crop Block Grant Program: The purpose of this program is solely to enhance the competitiveness of specialty crops in Montana. Visit their website to find funding opportunities and more information. Search [Montana SCBG](#).

Field Tested Reports and Videos: Find more reports about other projects and see videos of tools in action at the [Field Tested webpage, under Resources on FarmLinkMontana.org](#)

Farm Link Montana: A project of the Community Food and Agriculture Coalition to connect Montana’s beginning farmers and ranchers with the tools they need to succeed: farmlinkmontana.org