FIELD TESTED

Direct Seeding Techniques

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.

BLUE COYOTE FARM | STEVENSVILLE

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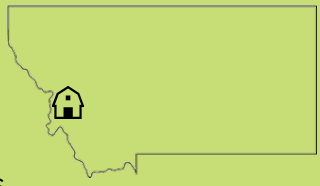
Blue Coyote Farm Snapshot

Locations: Stevensville, Victor, & Corvallis, MT
Operator: Angi Hronek
Acres: 1 acre
Crops: Vegetables, Flowers, Herbs



INTRODUCTION

Angi Hronek started her farm on a small budget, by operating on established farm sites. Her lease arrangements provide her with access to tools and infrastructure on each farm, reducing her startup costs and accelerating the development of her farm. Sharing equipment also comes with challenges. Angi must complete tasks in a single session and has less flexibility for things like cooling greens in the wash tub, or leaving a farm cart parked in the field. Angi used Field Tested funding to purchase her own supplies in order to increase the flexibility in her operation. In particular, she added supplies that are not conducive to sharing such as silage tarps, floating row cover, and shade cloth, which have helped her increase her direct seeding of crops and improve her germination rates in the field.

BLUE COYOTE FARM

Blue Coyote Farm is a small herb, vegetable, and flower farm in the Bitterroot Valley operated by Angi Hronek. Before starting Blue Coyote in 2019, Angi worked in agriculture for almost 10 years, working on farms and operating Piney Mountain Herbals, making and selling herbal products with her partner Jamie. Blue Coyote is split between three sites totaling a little over one acre of production. Angi has lease agreements with two established farms that include use agreements for tools and infrastructure including a high tunnel, tractors and cold storage. Access to this infrastructure has allowed Angi to slowly scale her business with lower up-front investment.

Angi uses organic growing practices and no spray methods. She chooses to grow very few brassica crops, to avoid using organic pesticides. She sells at the farmers markets in Missoula and Hamilton, and small wholesale accounts in the Bitterroot Valley.

DIRECT SEEDING IMPROVEMENTS

Angi works two off-farm jobs and farms on multiple sites and must maximize the limited time she has on her farm. For this project, Angi focused on improving her germination rates and weeding efficiency in direct seeded crops. She trialed several supplies and methods including floating row cover, shade cloth, silage tarps, flame weeding, and hand cultivation tools.

Project Supplies

- Row Cover, 7’ x 1000’
- Shade Cloth
- Silage Tarps, 24’ x 100’
- Pyroweeder - 30”, 5 burner push behind
- Stirrup Hoe, 5” Blade
- Stirrup Hoe, 3 1/4 “ Blade
- Garden Bandit Hand Hoe
- Istor Hand Sharpener
- Large File, 10 inch

Germination Methods

Good germination rates rely on consistent temperatures and moisture while the seed is initiating growth. Angi uses floating row cover and shade cloth to improve these

conditions when direct seeding crops. Both products protect the soil surface from the sun and reduce air movement at the soil surface, decreasing loss of moisture through evaporation. This protective layer of air also insulates the soil surface from temperature fluctuations that can cause inconsistent germination. Angi applies the covers immediately after seeding, using dirt was fine because she doesn't have a lot of wind.

Weed Control

Many farmers find that the most effective approach for weed management is a combination of methods. This provides control for weeds in multiple styles and stages of growth. For this project, Angi utilized silage tarps, flame weeding, and several types of hoes.

A silage tarp (black) and floating row cover (white) covering beds

The silage tarp kills weeds by excluding sunlight. The tarp is laid over the bed for several weeks, creating a warm, moist environment that encourages germination of weed seeds. Once the weeds emerge, they die due to a lack of light and are quickly decomposed by soil organisms. Angi utilizes this method before seeding crops, and also in areas that she wants to kill perennial grasses.

Angi likes the Weed Bandit for detailed weeding and because it is easy to teach to new workers.

Flame weeding is done by heating young weeds with a propane torch. The plants are not actually burned up, but the heat damages the cell structure and kills the plant. Angi uses this method of weeding on newly planted beds, right before they are about to germinate. Which for some crops, like cilantro, is about a week after seeding, before the crop has emerged.

Cultivation with hand tools has been a reliable method of weed control by farmers for generations. Angi utilizes a wheel hoe from Valley Oak Tools with a stirrup hoe attachment and tine weeding attachment. The Valley Oak wheel hoe has a tool-less quick hitch design that allows Angi to quickly change implements. Angi loves the easy height adjustment on the Valley Oak wheel hoe, making it easy share use with her partner who is a foot taller! For smaller or irregular areas, Angi uses a standard stirrup hoe and a hand held tool called the Weed Bandit.

COMPARISON OF METHODS

Flame Weeding

*Left: Cilantro planting that was not flame weeded.

*Right: Cilantro planting that was flame weeded right before germination.

Angi found flame weeding with the pyroweeder to be very effective in reducing weed pressure when the plants are still young. It took some time to get the setup just right, but it was definitely worth it!

Floating Row Cover

*Left: No row cover used.

*RIght: Floating row cover used.

Angi noticed better germination with the row cover as well as decrease in pest pressure. With the row cover root maggots cannot get in - a significant pest for her! She also saw an increase in overall yield when she used the row cover.

Additional Resources

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