

FIELD
TESTED



Weed Reduction Tools for an Urban Orchard



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.

Green Bench Orchard | Missoula



Fred Stewart
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Farm Snapshot

Location: Missoula
Operator: Fred Stewart
Acres: 3
Crops: Apples and Raspberries



INTRODUCTION

Fred Stewart of Green Bench Orchard made specific purchases to help keep weeds down and fertility up, hoping to increase his overall production of apples and raspberries at his U-Pick orchard while decreasing his labor spent in managing and balancing the two, according to organic standards. His goal was to look at methods that reduce the cost of cultivating the orchard. He hoped to observe both labor savings connected to weeding and increased



yield. He expected to share results from his methods that he hoped could be simulated by other small operations to improve small scale efficiencies.

GREEN BENCH ORCHARD

Fred Stewart is the owner and operator of Green Bench Orchard, located in urban Missoula. Fred began planting Semi-Dwarf apple trees in 2011. By 2013, he had 185 trees from eight different varieties planted. In 2015 he planted 140 raspberry crowns. He is Homegrown certified, which is a group of Montana growers that are dedicated to sustainable practices. In 2019 he became USDA Certified Organic.

Equipment Purchased

- Tilter
- Cordless Drill w/batteries
- Wheel Weeder
- 20 cubic yards of mulch

MULCH

It was challenging for Fred to find a supply of bulk compost that was certified for his organic orchard. He had originally planned on purchasing just 20 cubic yards of mulch, but in the end purchased a total of 30 because the company was some distance away in Superior. He used most of the compost under apple trees and some on his raspberry canes. Fred says that the plants and trees are responding well to the compost and he plans to make the same purchase next spring.



Above: The mulched apple trees in July 2020.



Above: An apple tree in July 2020.

Ultimately, Fred chose a company called Wood Solutions based out of Superior, MT. He plans to purchase more mulch in growing season 2021 even though it is labor intensive to spread.

TILTH AND CORDLESS DRILL

Fred thought the tilter would be a good tool for keeping the grass and weeds down in the compost surrounding the base of the apple trees. The one he chose, however, was not heavy duty enough to use in the grass outside of the compost and the chain broke, which he later replaced. He purchased a cordless drill and two large capacity 5 amp batteries with the

grant to power the tiller. He was able to use one battery, while the other charged.

WHEEL WEEDER

The wheel weeder did not work well for weeding grass and weeds under the apple trees. It didn't seem to be designed to be effective in the conditions Fred had under the trees. The area between the compost and the drip zone is where he wanted to use this tool. He found a gasoline powered Honda mini-tiller to be much more effective. The wheel weeder will be donated to the Missoula Urban Demonstration Project (MUD). Further research indicates that this tool might be better suited for growing vegetables.

IMPACTS

Fred hoped that these specific purchases would increase yields in his raspberry and apple crop. Because he keeps detailed records of both revenue and production, he found that his apple crop increased, while his raspberry yield went down. His overall production was less but he made more of a profit, even after donating extensively to the Montana Food Bank and sharing with neighbors, like usual. He donated 5% of all orchard revenue in 2020 to the Missoula Food Bank. Most years, Fred offers various discounts, but he did not offer any this year and he says no one asked for a discount.



Above: Additional labor is initially needed from local teens helping Fred spread 30 cubic yards of mulch in March and April '20, while trees were dormant and prior to pruning.

His apple trees are now coming into their prime and are producing more apples. He doesn't have an accurate way to measure blemished apples that end up in the compost pile or that were used as animal feed. He was also able to harvest for an additional three weeks this year.

Fred is unsure why the raspberries produced less, but as any steward of the land knows, there is a variance each year depending on weather, moisture, etc. He postulated whether the early freeze in 2019 damaged the canes. Fred thinks he will have a better idea next year.

Year	Crop	Production	Earning
2019	Apples	1,186 7# bags*	\$7,575
2020	Apples	2,336 7# bags*	\$18,743

Year	Crop	Production	Earning
2019	Raspberries	1,022 pints	\$3,765
2020	Raspberries	920 pints	\$4,020

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: [farlinkmontana.org](#)

