

FIELD
TESTED



Tools for Season Extension and Seeding



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.

SUNSHINE GARDEN | TREGO



Keith Poe
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Sunshine Garden Snapshot

Location: Trego, MT
Operator: Keith Poe
Acres: >1 acre
Crops: Salad Greens and
mixed vegetables



INTRODUCTION

Keith Poe of Sunshine Garden wanted to extend his growing season so that he could have earlier and later produce to offer to his market outlets. He wanted to increase the efficiency and precision of seeding to help save time and resources. His overall goal was to provide nutritious and wholesome food to his local community that is underserved in the specialty crop industry. He purchased a Jang JP-1 Precision Push seeder and Gothic Caterpillar Tunnel to help meet his growing season 2020 goals.



SUNSHINE GARDEN

Sunshine Garden is a fourth generation homestead with one-quarter acre in current production. Keith grows mixed vegetables with an emphasis on salad greens. At the beginning of the growing season, he planned to market his crops to the Trego Farmers Market, offer a small CSA program and wholesale to a local restaurant located just down the road from him and through Wicked Good Farm's distribution in the Flathead Valley. In addition to his garden, in homestead fashion, he also raises laying hens, broilers, and heritage turkeys for his family's enjoyment.



PURCHASES

Season Extension: 50' Gothic Caterpillar Tunnels

The Caterpillar Tunnel allowed Keith to expand his growing season by a full two months in the first spring of use. He hopes to gain similar results on the fall end of the season and hopefully into the winter with cold hardy crops and the addition of floating row cover. Historically, he had been able to direct seed carrots about three weeks before the last frost of June 1. This season, however, he was able to seed carrots into the tunnel on March 23rd, leading to the first harvest on June 5. He had successes with other early season crops as well, such as salad greens and beets with an earlier harvest date than prior years. Successions of tomatoes, peppers, and cucumbers were then transplanted into the tunnel starting June 1 (seeds were started April 6).



Equipment Purchased

- 50' Gothic Caterpillar Tunnel - \$1450
- Jang JP-1 Precision Push Seeder - \$405



Left: Early season greens.
Above: Greens ready to harvest three weeks early

Keith realized the true value of the Caterpillar tunnel when he was able to bring a greater diversity of crops to the first farmers market of the season on June 5th. He believes this helped to establish his presence at the market and gain customer loyalty.

Jang JP-1 Precision Push Seeder

The Jang JP-1 Precision Seeder allowed Keith to increase efficiency in the seeding process. However, a small, timed trial revealed that efficiency wasn't the entire story. Multiple variables affected the impacts of the seeder and it will take time and trials to get the best practices down.

He started with a 20ft bed with five rows. He seeded three rows with the Jang, and two by hand. He



hand-seeded at a rate of 4.5 minutes with bare seed and at a rate of 8 minutes with pelleted seed. Spacing was more controllable by hand, but proved to be too thin. Keith seeded three rows with the Jang in three minutes. Seeding was a bit dense in his opinion, but was much better than the other two methods.

Next, Keith tried to seed a 10' bed with five rows. He accomplished this in about three minutes. The density and germination were acceptable but not optimal. He also trialed a different variety of seed along with the prior seed used. He had various issues with both seeds. They either had poor spacing, poor germination, or density was not acceptable. He followed with another succession of a 10' bed, with five rows of a new seed. Spacing and/or germination was poor, or density was not

acceptable. His most recent succession was 50' rows using the seed from the prior trials. With a slight adjustment to the brush on the seeder, both rows had acceptable spacing and germination. Density seemed acceptable.

Keith's hypothesis was that the new seed was larger than the other seed and with a slight adjustment of the brush, allowed for a more consistent flow of the larger seeds, resulting in better seed placement and greater density. This theory has carried through with other crops with different size seeds such as beets. He has since learned that he can purchase specifically sized seed rollers that will help with his challenge of seed size and its effect on density and spacing.

IMPACTS

With the support of a Field Tested Mini-grant, Keith was able to grow his operation quite substantially in terms of season extension and ability to seed adequately. Before, he had four 20' beds and now he has expanded to eight 50' beds, the equivalent now of a field block. He plans to continue extending his beds. The tunnel also has the flexibility to shift to other beds. With this increase in overall farm production and efficiency, he hopes to expand his offerings and sell at an additional farmers market in rural Eureka.



Spring Seeding Results: Earlier Harvest Dates

Seed Type	Sow date w/ out Tunnel	Sow Date w/ Tunnel	Harvest Day w/out Tunnel	Harvest Day with Tunnel
Carrots	May 11	March 23	~July 24	June 5
Salad Greens & Beets	April 20	March 30	~June 25	June 5
Radish & Turnips	April 26	April 5	~June 26	June 5

Seeding Results: Time Savings

	Seeding by hand (bare seed)	Seeding by hand (pelleted seed)	Seeding with Jang Seeder
Seeding time per 20 ft row	4.5 minutes	8 minutes	1 minute

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