

Training Seed Producers and Increasing Local Markets for Seed Production

Final report for OW17-008

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Grant Recipient: Oregon State University

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State: Oregon

Principal Investigator:

[Maud Powell](#)

OSU Extension

Project Information

Abstract:

Southern Oregon is becoming a nationally recognized organic vegetable seed growing region with at least fourteen farmers in the area already selling commercial seed on contract for regional, national and international seed companies. While the climate of Southern Oregon is well-suited to seed production, growing seed is complex and challenging and requires significant training and education. The goal of this project has been to increase the number, capacity and success of organic vegetable seed producers in Southern Oregon in two ways; 1) through a comprehensive seed training program for both beginning and established farmers interested in growing seed and 2) conducting research on the barriers and challenges to developing a regional market for local seed producers.

The Seed Growers Training Cohort (now called "Growing Seed Agripreneurs") took place at the Southern Oregon Research and Extension Center (SOREC), which is part of Oregon State University. Ten individuals, many of whom own small farms, attended the course which met weekly on Thursday evenings for 3 hours from April 5th through October 18th, 2018. A 29-class curriculum was developed and presented that covered the planning, field preparation, growing, harvesting and cleaning of seed crops as well as seed business and marketing concepts. It included 6 field trips to regional seed farms and collaborated with Rogue Farm Corps on several of the classes and field trips. In addition, the members of the cohort created and managed a seed garden on the Teaching Farm for a hands-on learning experience. One-third of an acre was planted to various crops for seed harvest including lettuce, onion, tomato, pepper, bok choy, basil, cosmos, zinnia, beans and radish. All seed crops were harvested, threshed and cleaned by the course participants.

Two half-day workshops on seed harvesting and cleaning techniques were held at Chickadee Farm (8/30/18 and 9/30/18) and open to anyone interested in seed production. Total attendance was 39. During both workshops, participants were

guided through the seed harvesting and cleaning process including the demonstration of applicable small-scale tools and equipment and during one of the workshops, four commercial seed growers participated in a Q&A panel.

For the research into the barriers and challenges to developing a regional market for local seed producers, contact was made with both seed producers and produce farmers (seed buyers) to solicit their opinions on the subject. Both group surveys and individual phone conversations were used to gather information on seed issues and the results of these outreach efforts are detailed below.

Finally, a variety trial of six fall crops was planted in 2019 at OSU SOREC and a report detailing the trial was produced. Crops trialed included curly and russian kale, romaine lettuce, beets, turnips and radishes and varieties were selected from both national and regional sources based on feedback from local farmers. Farmers and the public were invited to a field day to view and self-evaluate the trials and 12 people attended. The trial report was promoted regionally via farmer lists serves and will be posted on two webpages.

Project Objectives:

This project worked to increase the number, capacity and success of organic vegetable seed producers in Southern Oregon through the following objectives:

1. Trained 10 beginning seed farmers through the Growing Seed Agripreneurs program, held at the Southern Oregon Research and Extension Center (SOREC) in Central Point Oregon including the 1-acre organic Teaching Farm. The training program was held weekly, for three hours on Thursday evenings, for seven months and included both lecture-based classes and hands-on work in the seed garden of the teaching farm.
2. Conducted two workshops demonstrating seed harvesting and cleaning techniques open to area seed producers and the public. 39 producers attended.
3. Assessed local markets for Southern Oregon Seed Producers
 1. Contacted 15 commercial vegetable producers and seed producers to discuss challenges and barriers to purchasing seed from regional seed producers and inquire on seed purchasing criteria and desires.
 2. At the Teaching Farm, trialed seed varieties from local seed producers alongside varieties commonly used by Southern Oregon vegetable producers. Six crops and 22 varieties were assessed in a triple-replicated trial.
 3. Conducted a field day for vegetable producers showcasing the variety trial in October 2019. 12 people attended.
 4. Produced a publication detailing results from the trials which was distributed to Southern Oregon producers and posted at the SOREC and Southern Oregon Seed Growers Association websites.

Cooperators

- [Sebastian Aguilar](#) (Educator and Researcher)
aguilase@oregonstate.edu

OSU Extension (1862 Land Grant)

- [Elizabeth Toby](#) (Educator)

elizabeth@roguefarmcorps.org

Rogue Valley Chapter Coordinator

Rogue Farm Corps (Nonprofit / non-governmental organization)

Research

Materials and methods:

The research component of this project was to determine the barriers and challenges to developing a regional market for local seed producers. This was done through recording the views and opinions of regional seed buyers on seed selection and purchasing and was accomplished through individual phone calls and an online survey.

In addition, a variety trial was planted to compare the performance of local varieties next to commonly used varieties from national retailers. Input for varieties in the trial, for both the local and national entries, was solicited from local farmers through phone calls and emails.

Research results and discussion:

A summary of discussions with local farmers (both produce-growers and seed-producers) and on the viability of developing a local market for locally produced seed are as follows:

Perceived challenges:

- Quality: Locally produced seed suffers from a reputation of being low-quality.
- Service: Local seed producers are not set up to easily sell seed to prospective buyers.
- Genetics: Varieties that commercial growers are seeking are often not available locally.
- Financial: The local-only market is limited and is not likely to fulfill seed grower needs.

Despite these challenges, many produce growers shared a desire to see these problems addressed as they would prefer to buy local seed if it met their requirements and several seed producers stated they would like to offer direct sales.

Potential solutions include:

- Promoting the true quality of locally produced seed through published germination and disease testing results as well as variety trials.
- Finding, developing and producing varieties that meet the criteria of local farmers.

- Developing an easy system for sales and delivery of local seed to local buyers.

These summarized points are addressed in more depth below.

Issue 1: Seed quality

Locally produced seed currently suffers from a reputation of being low-quality. Many produce farmers have had past experiences where locally produced (or small seed company sourced) seed has either had poor germination or excessive off-types. These issues hurt growers financially and so they quickly moved to sourcing from only larger, more reliable seed sources. Many of these growers have been in the business for many years and said that these experiences happened years ago but they had not gone back to buying from local or small-scale suppliers since. With all the risk inherent in farming, experimenting with new seed sources is a low priority and reputations built a decade ago still have weight today. In addition, questions remained if local seed producers or small seed companies had adequately addressed these issues or not. Ironically, many growers listed buying from national seed companies that several local seed producers grow seed for.

Future strategies to address the quality issue in local sales would include seed testing and variety trials. While all seed for sale must meet federal minimum germination rates, most seed sellers strive to sell seed that germinates at higher percentages. Should local producers seek to sell seed directly to farmers, it would be advantageous to publicize and include their most recent germination test result with each lot of seed sold, assuming seed producers are growing a quality product. Publicizing a tested rate could encourage sales while including it with the seed shipped helps farmers adjust seeding rates in the field. For certain crops, also testing seed for certain diseases would assure buyers that they would not be importing those diseases onto the farm. The scale of seed sales would need to be sufficient to profitably cover the cost of these tests though. Finally, in terms of providing seed that is consistently true-to-type, seed producers with direct sales are encouraged to develop and emphasize documentation of grow outs or trials that describe and/or demonstrate the percent uniformity of each variety. With assurances of good germ rates, no disease and clean genetics, buyers would have the confidence to give local seed a try.

Issue 2: Providing convenient and effective sales and service

Seed buyers listed convenient sales systems and rapid service as important benefits of buying from larger seed companies. Many farmers with succession crops end up buying seed throughout the year and often need to restock under significant time pressures. In these situations, efficient order fulfillment systems are critical. Most local seed producers currently have no system to promote their offerings or receive and fulfill orders. While online web stores are increasingly easy to set up, the cost, time and skill required to build and maintain them is currently outside the comfort range of many seed producers. Simpler systems are possible but limit the effectiveness of generating sales. Several local seed producers said if assistance was available to set up a web store, they would use it. Once a system is set up, producers will need to commit to fulfilling orders as quickly as possible to ensure customer satisfaction. Seed producers should consider their capacity to do this and plan accordingly before committing. Several seed producers stated they had previously assessed the work involved in direct sales and determined that they viewed it as excessive and would not be interested in developing it, choosing instead to focus on only wholesale sales. Any seed producer considering direct seed sales is encouraged to carefully develop a business plan that considers both market/income potential and labor/expenses required to build and maintain a direct

market channel, to ensure that it can meet their profitability expectations. A cooperative has the potential to streamline some of these activities though it is not without its own challenges. Finally, some small seed companies would encourage motivated growers to work collaboratively with them since they have many of these systems already in place.

Issue 3: Varieties available

Most produce farmers described how marketplace pressures for uniformity and financial pressures for yield both pushed them to buy specific varieties, often hybrids and other modern commercial varieties. Much of the locally produced seed has genetics that do not fit this category and are more suitable to home gardeners or niche markets. To increase local sales, seed producers should seek out varieties that appeal to commercial growers more and conduct trials to confirm that they meet these grower expectations. In addition, if these are open-pollinated varieties, consistent roguing and stock seed production would be required to maintain, and ideally improve, genetic quality. Several produce farmers listed the genetic degradation over time of good OP varieties as an issue they had struggled with in the past. Collaborations between seed producers/breeders and produce growers for either seed production or plant breeding has also been attempted with mixed results. While there is strong potential for both parties to benefit, excellent communication, clear expectations and a good relationship are essential elements. In an ideal setting, the grower receives compensation for labor/land/supplies provided as well as access to improved genetics that can increase their profitability. The seed producer/breeder would have access to larger populations for selection, is able to focus more on selection, harvesting and other non-growing tasks and can use the feedback and insights of the growers to help guide the breeding process.

Summary of seed purchasing criteria of local organic vegetable farmers:

Variety attributes:

- Vigorous, performs well consistently
- High-yield of marketable product
- Uniformity of harvested product
- Type has market demand
- Adapted to farm (climate/pest/system)
- True-to-type (minimal off-types)

Seed attributes:

- Good germination rate
- Disease-free
- Affordable
- Certified organic
- Pelletized (some)

Vendor attributes:

- Simple + quick ordering
- Quick shipping plus confirmation and tracking
- Access to seed company rep for advice

- Reputation for quality and accountability

The variety trial results are presented in the report [2019.Fall.VarietyTrial.sm](#).

Participation Summary

15 Farmers participating in research

Educational & Outreach Activities

2 Curricula, factsheets or educational tools

1 On-farm demonstrations

6 Tours

3 Workshop field days

PARTICIPATION SUMMARY:

54 Farmers

9 Ag professionals participated

Education/outreach description:

The activities indicated above include 1) the "Growing Seed Agripreneurs" program, 2) two "Seed Cleaning and Equipment" workshops and 3) a field day to showcase the variety trial.

The "Growing Seed Agripreneurs" program was a 29-week course for aspiring seed growers that was held at OSU SOREC from April 5th through October 18th, 2018. Participants met every Thursday evening for three hours for both a lecture/discussion on seed production as well as hands-on time in the Teaching Garden learning and working with the seed and variety trial garden. In addition, the class went on 6 field trips to local seed-producing farms. The "Growing Seed Agripreneurs" program course schedule and curriculum can be viewed [here](#). 10 people enrolled in the program and weekly attendance averaged between 6-8 people. Seed crops grown and harvested by participants in the Teaching Garden included lettuce, onion, tomato, pepper, bok choy, basil, cosmos, zinnia, beans and radish. Participants observed and managed each crop from planting through harvest with attention focused on the seed producing aspects of each crop including modified spacing, plant supports, flowering habits, fruit/seed set and timing of harvest. All crops were threshed and the seed cleaned by participants as well. Seed was distributed among participants at the end of the course.

The "Seed Cleaning and Equipment" workshops were held at Chickadee Farm in Talent Oregon, once on 8/30/18 and again on 9/30/18. 24 attendees came to the 8/30 workshop and another 15 attended the 9/30 workshop for a total of 39 attendees. The workshop demonstrated the seed cleaning equipment used at Chickadee Farm including a modified portable thresher, scalping table, plot combine, winnow wizard and a clipper air-screen machine. The second workshop

also included a guest panel of 4 local seed farmers to answer participant questions. Participant feedback was very positive for both workshops.

The variety trial field day was held on October 22nd to showcase and compare the 6 crops and 22 varieties planted. 12 people attended and were offered blank evaluation forms to self-assess the varieties. Tastings were facilitated as well.

Learning Outcomes

16 Farmers reported changes in knowledge, attitudes, skills and/or awareness as a result of their participation

Key changes:

- **Seed production:**
An evaluation survey was conducted for graduates of the 'Growing Seed Agripreneurs' course and the results can be viewed in the outcomes section of this report. 7 of the 10 participants completed the survey and all 7 reported increased skills and knowledge on the topic of seed production. The course included 23 lectures on various seed-production related topics, hands-on seed production in the Teaching Garden and field trips to local seed-producing farms. The course schedule is attached.
Several course participants reported currently working on incorporating new or increased seed production and sales into their small farm operations.
- **Seed threshing and cleaning techniques and equipment:**
While a formal evaluation survey was not conducted, verbal feedback from participants at the two workshops held at Chickadee Farm was very positive. Participants were strongly engaged and appreciative of both the demonstrations and the grower Q&A panel. The 35 participants are not represented in the above count as we did not formally evaluate them.
- **Varietal selection:**
Participants in the variety trial field day shared that they learned both about the differences between certain varieties but also about how to set-up and conduct a replicated variety trial.

Project Outcomes

16 Farmers changed or adopted a practice

18 Farmers intend/plan to change their practice(s)

1 Grant received that built upon this project

1 New working collaboration

Project outcomes:

Outcomes of the seed training program include all participants reporting increasing

their skills and knowledge on seed production and seven of them indicated so on the end-of-course evaluation (the evaluation results can be viewed [here](#)). Of the participants, four reported starting or increasing their commercial production of seed and two others reported their interest in doing so in the future. The other four participants all indicated a likelihood to start, continue or increase non-commercial seed production. There was also strong interest shown by all in plant breeding and regional varietal adaptation. All participants showed a continued commitment to organic agriculture and the course provided them with new strategies to manage seed production organically including organic soil, weed, pest and disease management.

The seed threshing and cleaning workshop that was held as part of this course yet open to the public had a strong showing of local growers who were engaged in learning what tools, equipment and strategies they would need to incorporate organic commercial specialty seed production into their operations. Unfortunately, we did not survey participants but verbal feedback indicated this information was very well received and very likely encouraged some participants to improve, start or increase their own seed production.

These results of this course and workshops will likely contribute to agricultural sustainability through 1) an increased number of organic seed producers, 2) seed producers being more efficient and profitable and 3) an increased number of growers adapting varieties to their local conditions.

Outcomes of the research component are yet to manifest or be determined though hopefully local seed producers will use the information and recommendations to develop and increase a local direct market for seed.

Recommendations:

While the overall results of the educational course were positive, we did realize potential improvements. Aspects contributing to the success of the seed training course were:

- The combination of classroom presentations with hands-on activities and tours of production farms.
- The opportunity for group discussions after each presentation.
- The practical experience of the instructor and his sharing of that experience.

Aspects that would be improved in the future include:

- Because many farmers who could not attend a 7 month long weekly course, a series of shorter course or workshops could have better accommodated their time availability.
- Course participants varied in their previous experience and splitting beginner-level information and advanced-level information into separate courses would enable advanced participants the option of skipping the beginning-level instruction.
- If the course were to be split into several components, moving some or all of the hands-on component to an existing seed production farm would eliminate the need to create a demonstration garden and yet still provide participants with the valuable in-field experience while better demonstrating aspects of seed production on a commercial scale.

Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture or SARE.



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