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Developing permaculture techniques for increased production and profit in sustainable year-round agriculture for beginning farmers and ranchers in southwest Iowa

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Developing permaculture techniques for increased production and profit in sustainable year-round agriculture for beginning farmers and ranchers in southwest Iowa

Abstract

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Keywords

Human systems demographics and beginning farmer programs

Disciplines

Horticulture | Human Geography | Sustainability



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Budget:

\$21,054 for year one
\$18,191 for year two

Are there better growing techniques and tools for producers in southwest Iowa to use to grow year round local foods and can those producers aggregate as a formal growers association to market as a group to larger wholesalers and retailers?

A trip to Growing Power in Madison, Wisconsin, was the initial stimulus to explore new methods of growing produce using permaculture practices and marketing in order to enhance the growing power of local foods in southwest Iowa. The team employed a high tunnel located on Golden Hills RC&D office grounds, development of Lone Tree Foods, LLC, and establishment of the Loess Hills Collaborative CSA to offer new opportunities in their part of Iowa.



MARKETING

Background

Permaculture (Permanent Culture) is the conscious design and co-creative evolution of agriculturally productive ecosystems and economically just social systems that have the diversity, stability and resilience of “natural” systems. Educators in southwest Iowa have been gathering information and providing training to farmers and stakeholders to prepare them to implement systemic changes to better support the local foodshed using some of these principles. This project had three objectives:

1. Conduct demonstration projects for year-round growing, aquaculture and vermiculture, all using permaculture design elements to promote maximum resiliency.
2. Establish a formal growers’ association/network for local food producers in southwest Iowa and the greater Omaha metropolitan area. The association would be a separate entity, member-based, to serve the day-to-day needs of local producers.
3. Start-up assistance for a rural collaborative Community Supported Agriculture (cCSA) operation to sell fresh produce shares within the rural area of southwest Iowa and the Omaha metropolitan area.

Approach and methods

A demonstration high tunnel was built on the office grounds of the Golden Hills RC&D in Oakland. A workshop that “kicked off” the building of the high tunnel took place in March 2011. The particular brand of structure was chosen because it was being considered by most farmers in the region for their own use. The structure was very cost-effective, but after several months of use serious flaws surfaced and multiple modifications had to be made. The height of the structure was perhaps the greatest challenge in maintaining adequate early- and late-season growing temperatures. A number of workshops and field days were held at the high tunnel.



High tunnel at Golden Hills RC&D.

Golden Hills RC&D worked with local farmers and technical assistance providers to research suitable crops for year-round production in the area. The second phase of the project placed additional emphasis on soil health with vermicomposting and year-round production with aquaponics inside the high tunnel. Records were kept to document the process of establishing a suitable growing environment that follows the principles of permaculture.

Results and discussion

Difficulties with managing the modifications to the high tunnel, and attempting to meet the growth requirements of potential crops made long-term installation and management difficult. Composting failed to provide an adequate source of heat for the tunnel and introduction of an aquaponic system in the high tunnel met with little success. Organizers ended up using a smaller aquaponics demonstration model for education and outreach purposes.

The high tunnel was successful for growing certain cold-climate crops (such as kale, brassicas and spinach) that could be managed in the unheated environment. A small-scale aquaponic operation (placed elsewhere, not in the unheated high tunnel) was used to grow lettuce and green beans during winter months.

Several farmers have incorporated permaculture principles on their farms and four have built their own high tunnels using the project training as a base. Grant funds were used to purchase six worm farms to be used as traveling demonstration project for schools within the eight-county area. The intent is to allow the classes to try out an aspect of permaculture and begin the larger conversation about local agriculture.

The Loess Hills collaborative CSA (cCSA) was formed in rural Pottawattamie County. Three local farms participate and have an innovative partnership with Iowa Western Community College (IWCC). Employees were added in 2013 and additional shares were sold in the participating communities. The cCSA offers 18-week subscriptions, four drop-off sites, farm tours and six seasonal cooking classes for subscribers in partnership with the IWCC culinary arts staff.

Lone Tree Foods (LTF) is the established association for encouraging and supporting wholesale local food transactions for farmers in the foodshed. It brings together local food producers in western Iowa and eastern Nebraska. This alliance combines the efforts of nonprofits, community colleges, restaurants and trainers to build the capacity of producer members. In 2014, the group launched an e-commerce website to allow aggregated sales to supermarkets and restaurants. The group is actively pursuing an LLC business designation and is partnering with existing businesses in Iowa and Nebraska to transport aggregated sales orders to wholesale buyers in the Omaha/Council Bluffs foodshed.

In the year three extension of the project, organizers offered a Permaculture Design Certificate course (72 hours) at IWCC. This was to address the high demand for such workshops and advanced training that stakeholders expressed as the project pro-



Radishes from inside high tunnel, November 2013.

gressed. The class has been linked to the demonstration site and farms where participants already have successfully implemented systems taught throughout this project. IWCC is considering offering the portions of the course via web-based education in order to reach students in counties beyond Pottawattamie. The course was offered again in summer 2014 and was partially funded by this grant.

Impact of results

The project provided education, training and skills development to new and beginning farmers and ranchers, as well as existing local food producers. The high tunnel structure was designed to be an informal learning laboratory to show whether and how permaculture techniques developed outside the region could be applied in southwest Iowa. The grant funding created the infrastructure for promoting permaculture methods and incubating producer-led business initiatives in the region.

Despite the challenges involved in creating a true, year-round permaculture growing environment, much was learned. In addition to teaching new growing methods, the project worked to expand partnership opportunities for producers to support each other in the future. Lone Tree Foods and Loess Hills cCSA have evolved into strong, operator-led enterprises with solid business plans. Prior to this project there were no grower cooperatives of any kind in southwest Iowa. The high-tunnel, vermiculture and aquaponics equipment will continue to be used to encourage innovation among local producers. They offer farmers a means of testing new methods before adopting permaculture in their own agricultural practices.

Education and outreach

The project conducted an extensive amount of outreach in southwest Iowa. Among the efforts were:

- Demonstrations and training sessions: eight
- Meetings and presentations: 35
- Farm tours and field days: seven
- Workshops: 25

Leveraged funds

Additional resources were leveraged for this project from several other funders:

- USDA-Rural Development, Rural Community Development Initiative, \$83,485
- IDALS, Specialty Crop Block Grant, \$18,843
- Clif Bar Family Foundation, \$4,000
- USDA-Rural Development, Rural Business Opportunity Grant, \$83,000

***For more information,
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