

Title: Learning Organic Agriculture at Washington State University

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BIOAg Learning Site: WSU Organic Farm

Abstract:

Since 2004, Washington State University has had a three-acre certified Organic Farm that operates as a teaching and research farm for students in the Organic Agriculture Systems major and as a CSA (community supported agriculture) enterprise. The Organic Farm and CSA enterprise give WSU a practical model to use for teaching purposes and volunteer opportunities. Both provide tools to teach university students (via Soils 480, the organic field course) the skills to grow organic fruits and vegetables and operate a CSA enterprise or small organic farm. The Organic Farm also provides farm space and technical assistance for undergraduate and graduate student research projects and education for regional small-scale organic growers. The undergraduate students get research credit in Soils 495 and the grad students get research credit in Soils 700 and 800. These projects are grant funded. The Organic Farm, the CSA, and Soils 480 are all part of the Organic Agriculture Systems major, and students in the major are required to work on the Farm by taking six credits of Soils 480. Through numerous field days and tours given each year, a larger audience of more than 1000 children, community members, students, faculty, and small-scale growers annually visit the Farm and gain a better understanding of the Farm's operation and the larger local food system. This helps to foster strong relationships and build new partnerships with the Moscow-Pullman communities. The farm has grown from 3 to 4 acres and will likely be close to 10 acres in the next five years. This increase in space is partly due to the need for more certified organic research space. All of this would not be possible without Brad Jaeckel, who manages the Organic Farm and CSA and teaches Soils 480, all under the supervision of John Reganold.

Project Description:

From 2007 through 2008, the WSU Organic Farm grew from 3 to 4 acres. Brad Jaeckel, the Organic Farm manager, has continued to offer Soils 480, *Practicum in Organic Agriculture*, to no more than 15 students in each of the three terms offered per year. The practicum has continued to facilitate hands-on learning to students in the Organic Agriculture Systems major as well as a diversity of other non-majors. The number of students in the Organic Agriculture major is on the rise and currently stands at 20.

The farm also continues to produce quality crops for the increasingly popular CSA enterprise offered to the Pullman community. This past season the farm was able to increase participation directly to Pullman residents by managing a new mid-week farmer's market in downtown Pullman. Support for the market and the farm has grown over the season and will continue as the market plans a second season in 2010. In fall 2009, the WSU Center for Sustainable Design started work on the creation of a unique, long-term project called the Smart Farm. The Smart Farm project combines expertise from the

College of Engineering and Architecture and CAHNRS to develop sustainable infrastructure and management practices for the Organic Farm. Through this project, numerous companies and foundations have been and will be approached for financial support of building the infrastructure.

Outputs:

Publications:

- *25 weekly newsletters were written by Brad Jaeckel during the CSA harvest season for the CSA members. These newsletters are archived on the farm's website (css.wsu.edu/organicfarm).
- *Farm events and workshops were advertised on the farm's website, which also provides a location for many of the CSA resources and related research publications.
- **Alaska Airlines Magazine*, article on Green Degrees in Northwest schools, February 2009.
- *Milano, C. 2008. A major opportunity for young farmers. *American Farmland*. pp. 19-20. (Article on the Organic Farm and Organic Agriculture major at WSU)
- *Milano, C. 2008. Creative ways to energize your career. *Science* 321:1513-1518. (Article on the Organic Farm and Organic Agriculture major at WSU)
- *Ott-Borrelli, K.A., Koenig, R.T., and Miles, C.A. 2009. A comparison of rapid potentiometric and colorimetric methods for measuring tissue nitrate concentrations in leafy green vegetables. *HortTechnology* 19: 439-444. (This research work conducted on and supported by the Organic Farm in 2007 and 2008.)

Outreach and Education Activities:

- *Food Safety Workshop, "Harvesting and Post-Harvest Handling", Pullman, WA, 5/28/09.
- *Field Day, Tilth Producers Farm Walk Education Series, Pullman, WA, 7/31/09.
- *Tours and on-farm presentations for 500+ participants a year.

Impacts:

Short-Term (knowledge gained and shared)

Soils 480 provided participating students the skills for growing organic vegetables and small fruits as well as management practices for operating a small organic farm and CSA enterprise. Research in winter hoop house production for seasonal greens continues to be an important project for students and local growers.

Intermediate-Term (current & expected change in behaviors)

CSA members, the Pullman community, and local organic growers gained a better awareness of the local food system and food security. This was accomplished by promoting and teaching at the new Pullman Farmer's Market (which Brad Jaeckel started and managed), on-farm events, and at local stores and dining establishments.

Long-Term (potential change in economic/environmental/social situations)

New farms and upcoming farmers are continuing to access the Organic Farm and use their support to develop a larger and stronger food system in the Palouse. The new Smart Farm project will push the Organic Farm to be a continued leader in sustainable farming, marketing, and social networking.

Additional Funding Applied For or Secured:

- *Full time salary and benefits for Brad Jaeckel secured by CAHNRS, 11/1/09
- *\$20,000 grant proposal, “Sensing Equipment to Support a Detailed Resource Flows Analysis for Water Use and Availability on the WSU Organic Farm”, submitted to Decagon Devices, Inc. on 11/2/09.
- *Earthbound Farms proposal for \$100,000 to be submitted by December 31, 2009 to support Smart Farm project (John Reganold and Heidi Jarvis of the WSU Foundation have already been in contact with Earthbound Farms)
- *Safeway Incorporated proposal for \$100,000 to be submitted in 2010 to support Smart Farm project (John Reganold and the Heidi Jarvis of the WSU Foundation have already been in contact with Earthbound Farms)
- *Paul Allen Foundation proposal for \$5 million to be submitted in 2010 [President Floyd has already been approached by Mike Wolcott (College of Engineering) and Heidi Jarvis (WSU Foundation) about this request and is in favor of it; John Reganold was on professional leave in Kansas so he could not attend this meeting but was fully aware of it.]

Graduate Students Funded: None

Recommendations for Future Research:

The Smart Farm project will provide both undergraduate and graduate research projects.

- Soil Moisture monitoring in different vegetable crops for specific irrigation recommendations
- Weather data collection for potential wind turbine energy production
- Soil fertility monitoring for specific mixed vegetable crop rotations
- GPS mapping
- Pilot small-scale methane digester for energy production
- Integration of small-scale livestock operations
- Design and construction of energy neutral greenhouse systems
- Assist in design and construction of energy-efficient buildings