

BIOAG PROJECT PROGRESS REPORT TEMPLATE

TITLE: Combined Soil Quality Workshops for Irrigated Ag

PRINCIPAL INVESTIGATOR(S) AND COOPERATOR(S): Andrew M. McGuire and David Granatstein

KEY WORDS: Soil quality, soil health, soil organic matter, Columbia Basin, irrigation, vegetables, cover crops, high residue farming

ABSTRACT

Columbia Basin farmers and the people that supply and support them are very interested in how to build soil quality (a BioAg priority area) in irrigated cropping systems. The WSU irrigated ag email system has 433 subscribers to the soil quality/health topic area, more than all but one of the 42 available topics. We have held several successful Building Soils for Better Crops workshops in the past as well as a series of high residue farming workshops. Both efforts have stressed soil quality. Now, to better serve this clientele we want to offer a 2-day conference covering several aspects of building soil quality. The first day would cover soil organic matter (the basis of soil quality), Soil C and N cycles, and soil management principles. Then, building on these principles, we would offer a full day workshop on using cover crops and green manures, high residue farming, and grazing to build soils. Attendees will be able to choose to attend either day or both. This conference will take place on consecutive days in December, at the Advanced Technologies Education Center of Big Bend Community College in Moses Lake, WA.

PROJECT DESCRIPTION

We organized a two-day conference held November 27-28, at the Advanced Technologies Education Center of Big Bend Community College, in Moses Lake, WA. The first day covered the basics of building soils for better crops, the second day, cover crops and green manures, high residue farming and grazing. Attendees were able to choose to attend either day or the whole conference.

The Building Soils for Better Crops workshop speakers covered:

- The primary role of soil organic matter and its relation to soil function (Michelle Wander, University of Illinois)
- The soil carbon and nitrogen cycles and how these interact with each other and with soil organic matter (Michelle Wander, University of Illinois)
- The basics of building soil quality and soil quality measurement (Harold Van Es, Cornell)
- Organic soil amendments (Andy Bary, WSU)
- Cover crop cocktails integrated with livestock production and no-till cropping (Joshua Dukart, Bismarck, North Dakota; Gail Fuller, Kansas)
- Green manures in potato production (Brendon Rockey, Colorado)
- Living mulches for corn (Ken Moore, Iowa State)
- The stratification of soil organic matter as a soil building strategy for low organic matter soils, and the integration of no-till, cover crops, and grazing (Alan Franzluebbbers, USDA-ARS)

We used the interactive response systems (Turning Point) to get feedback from the audience and promote active learning.

Based on prior attendance at our Building Soil workshops, we planned to attract 150 individuals. We had 210 people sign in over both days.

ADDITIONAL ACTIVITIES:

With leftover funds, we held two other local “Building Soil Tilth” workshops, with a total attendance of 27. In addition, we purchased 30 copies each of two books: Building Soils for Better Crops and Managing Cover Crops Profitably. These will be given out to local producers over the next year. Finally, we purchased software and equipment that will allow us to make podcasts on Soil Building topics, especially using material developed for high residue farming publications soon to be published.

OUTPUTS

- Work Completed: We completed the conference and two workshops, with 237 people attending. The presentations (except the videoconference with Harold Van Es) were recorded. This recording and slideshows will be used to produce a summary of the presentations.
- Publications, Handouts, Other Text & Web Products: In progress
- Outreach & Education Activities: see work completed above

IMPACTS

We have both quick responses (TurningPoint) and a written survey responses from those who attended this conference. The results are below.

- Short-Term:
 - 62% gained information about soil building principles:
 - 52% gained knowledge on measurement of soil health/quality
 - 54% gained knowledge on use of soil amendments: %
- Intermediate-Term:
 - 73% of the farmers in attendance had increased their use of soil building practices in past five years impacting 82,250 acres.
 - 67% said that previous WSU education programs on soil quality had led to increased use of soil building practices.
 - Farmers using soil building practices estimated that they are seeing an average of \$22/ac benefit from soil building, or \$215,356 benefits per year on the acreage represented by our survey respondents.
- Long-Term:
 - The top benefits that farmers are seeing are better soil tilth, less wind erosion, improved water infiltration, and better water holding capacity. These benefits are evident on 13,360 acres (farmers) and 17,177 acres (crop consultants).

ADDITIONAL FUNDING APPLIED FOR / SECURED: \$5000 from the Columbia Plateau PM10 project was used to cover speaker travel expenses.

GRADUATE STUDENTS FUNDED: none

RECOMMENDATIONS FOR FUTURE RESEARCH: N.A.