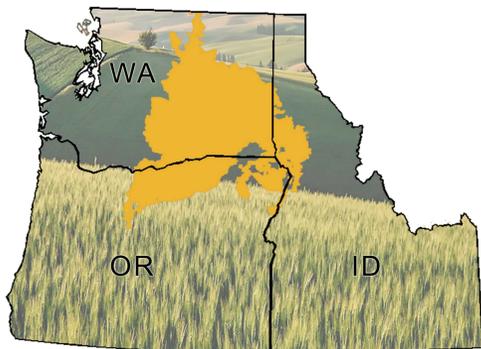


Attitudes toward Soil and Water Conservation and Soil Fertility Practices by Farmers in Dryland Areas of the Inland Pacific Northwest

R. L. Mahler, J. D. Wulfhorst and S. D. Eigenbrode University of Idaho, Moscow, ID 83844

Introduction

- The Inland Pacific Northwest is the most productive dryland wheat growing region in the world.
- The use of sustainable cropping practices are essential to maintain the long-term productivity of this region.
- Local grower attitudes toward sustainable cropping practices are an important measure of their willingness to adapt to meet both production and environmental needs.
- The purpose of this poster is to define and share grower attitudes about historic and current soil fertility, soil conservation and water conservation practices in the region.



Methodology

- Statistically designed surveys were developed and administered to growers within the region.
- The Dillman mail-based survey methodology was used.
- Over 5,000 farmers have been surveyed since 2002.
- Five different surveys were conducted in this 12-year time period.
- Four step mail-based survey:
 - Step 1: letter, survey, return envelope
 - Step 2: reminder postcard
 - Step 3: more urgent letter, survey
 - Step 4: reminder postcard
- Survey methodology was designed to achieve a grower response rate of at least 40%.
- Grower response rate exceeded 50% in three of the five surveys.
- Sampling error was less than 6%.

Soil Fertility & Soil Sampling

- Surveys conducted in 1981, 1996 and 2011 documented the importance of soil fertility and soil sampling.
- Over 62% of growers attributed more than 50% of their annual crop yield to soil fertility.
- Compared to the 1981 survey results, in 2011 farmers were more likely to:
 - (1) attribute more of their yield to soil fertility,
 - (2) have their soils sampled,
 - (3) collect their own soil samples, and
 - (4) make their own fertilizer recommendations.

Yield Attributed to Soil Fertility

Yield attributed	1981 (%)	1996 (%)	2011 (%)
< 20%	7.4	8.4	0.6
20 to 30%	12.6	10.2	4.0
30 to 40%	24.3	14.3	5.9
40 to 50%	20.1	28.1	16.8
50 to 60%	16.4	18.4	26.5
> 60%	19.2	20.6	44.9

Do You Collect Soil Samples?

Soil Sampling	1981 (%)	1996 (%)	2011 (%)
Yes	49.0	57.4	68.3
No	22.6	16.4	8.4
Sometimes	28.4	26.2	23.3

Who Makes Your Fertilizer Recommendations?

Making recommendation	1981 (%)	1996 (%)	2011 (%)
Farmer	26.5	40.5	47.2
Fertilizer dealer	53.6	49.3	43.1
Consultant	3.0	3.2	6.0
Extension agent	16.9	5.3	2.0
Other	0.0	1.7	1.7

N and P Use

- Surveys conducted in 1981, 1996 and 2011 documented changing N and P use.
- Surveys document nutrient use over a 40-year period (1981 survey collects 10-year history).
- Nutrient surveys serve as baseline information that can be used both in educational programming and to compare with future use.

Nitrogen Application Trends

N trend	1981 (%)	1996 (%)	2011 (%)
Significantly higher	15.4	10.2	8.0
Slightly higher	46.5	40.4	38.1
No change	33.2	36.4	38.1
Slightly lower	4.0	8.7	12.3
Significantly lower	0.9	4.3	3.5

Phosphorus Application Trends

P trend	1981 (%)	1996 (%)	2011 (%)
Significantly higher	30.6	18.4	8.0
Slightly higher	15.3	18.0	28.0
No change	58.4	47.2	51.6
Slightly lower	4.1	13.4	9.0
Significantly lower	1.6	3.0	3.4

Contrasts

Parameter	Contrast	Significance
More N used (significantly + slightly)	1981 vs. 2011	0.012*
	1981 vs. 1996 1996 vs. 2011	0.034* 0.414
More P used (significantly + slightly)	1981 vs. 2011	0.008**
	1981 vs. 1996	0.084
	1996 vs. 2011	0.605

Water

- Questions about the importance of water conservation (and water quality) have been asked of growers several times since 1981.
- Growers were asked about: (1) the importance of water conservation, (2) their engagement in water conservation practices and (3) the importance of water quality.
- Over 40% of growers consider water conservation important and are actively engaged in water conservation activities.
- Over 83% of growers consider water quality important.

Water Conservation - Importance

Importance	Percent of growers
Extremely important	16.6
Important	24.5
Somewhat important	34.2
Less important	16.6
Not important	8.1

Water Conservation - Engagement

Engagement level	Growers, %
Highly engaged	17.4
Moderately engaged	24.1
Somewhat engaged	20.2
Low engagement	18.0
No engagement	20.3

Water Quality - Importance

Importance	Percent of growers
Extremely important	36.5
Important	47.2
Somewhat important	10.2
Less important	2.6
Not important	3.5

Soil Conservation

- Questions about the importance of soil conservation have been asked of growers several times since 1981, including in the recent REACCH survey.
- Growers were asked about: (1) the importance of soil conservation, and (2) their engagement in soil conservation.
- Over 60% of growers consider soil conservation important, while over 70% of growers consider themselves either moderately or highly engaged in soil conservation activities.

Soil Conservation - Importance

Importance	Percent of growers
Extremely important	32.4
Important	30.1
Somewhat important	13.2
Less important	12.1
Not important	12.2

Soil Conservation - Engagement

Engagement level	Growers, %
Highly engaged	42.8
Moderately engaged	29.1
Somewhat engaged	12.6
Low engagement	7.1
No engagement	8.4



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