

V(A). Planned Program (Summary)

Program # 18

1. Name of the Planned Program

Sustainable Energy: Nutrient and Waste Management

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	10%		20%	
102	Soil, Plant, Water, Nutrient Relationships	10%		20%	
133	Pollution Prevention and Mitigation	10%		20%	
205	Plant Management Systems	10%		5%	
403	Waste Disposal, Recycling, and Reuse	50%		30%	
601	Economics of Agricultural Production and Farm Management	10%		5%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	2.2	0.0	1.0	0.0
Actual	3.3	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
125990	0	88267	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
125990	0	88267	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
74035	0	609567	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Sustainable energy: Nutrient and waste management team is made up of nine faculty members contributing a total of 3.3 FTEs to this project. Team members generated \$139,190 in external grant support and made 4,576 direct teaching contacts. Team members produced three peer-reviewed Extension publications and two articles in professional and scientific journals. The Team has three major areas of focus:

- Crops and Fertility
- Integrated Systems
- Animals and Facilities

Work in sustainable energy includes demonstration and education efforts to reduce the need for inorganic fertilizers and conservation of energy required for its production; and various demonstrations and educational programs targeting and energy capture from manure generated from our large dairy industry.

Nutrient Waste Management Faculty designed, developed, and delivered the Idaho Master Composter and Recycler Program, conducted trials to determine application characteristics of manures, revised numerous fertilizer guides, and collaborated with producers installing, testing, and documenting technologies including bio-digesters on dairies.

2. Brief description of the target audience

Target audiences include dairy producers, crop producers, dairy allied industry, small farm owners, lawmakers, home owners, small livestock producers crop consultants, and regulatory agencies

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	3000	50000	200	0
Actual	4123	59879	453	400

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010
 Plan: 0
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total

Plan	3	0	
Actual	3	3	6

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Bi-annual NWM Conference; number of participants

Year	Target	Actual
2010	50	72

Output #2

Output Measure

- Educational Field Days and Tours; number of participants.

Year	Target	Actual
2010	100	699

Output #3

Output Measure

- CCA Credits awarded through Online Testing.

Year	Target	Actual
2010	60	121

Output #4

Output Measure

- Number of nutrient and waste management presentations at producer and fieldman meetings.

Year	Target	Actual
2010	15	26

Output #5

Output Measure

- Nutrient Management applied research projects and demonstrations, number of projects

Year	Target	Actual
2010	7	18

Output #6

Output Measure

- Nutrient Management articles prepared for newsletters and trade publications

Year	Target	Actual
2010	6	15

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: Improve application of NMP principles on farms; I: Number of participants indicating their intention to adopt recommended practices
2	O: Producers and consultants learn new skills and methods through research-based education. I: Number of participants indicating an increase in knowledge about NWM.
3	O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.

Outcome #1

1. Outcome Measures

O: Improve application of NMP principles on farms; I: Number of participants indicating their intention to adopt recommended practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	10	56

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Nutrient management practices need to be improved to improve Idaho's water, soil, and air quality while maintaining and improving crop performance.

What has been done

Presentations were given at the Idaho Nutrient Management Conference that offered useful and current information on practices that improve nutrient and waste management in Idaho.

Results

Of the 70 attendees at the Idaho Nutrient Management Conference, 10 reported that they would change practices and 8 reported that they may change practices, based on the information that they learned at the conference.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
133	Pollution Prevention and Mitigation
403	Waste Disposal, Recycling, and Reuse
601	Economics of Agricultural Production and Farm Management

Outcome #2

1. Outcome Measures

O: Producers and consultants learn new skills and methods through research-based education. I: Number of participants indicating an increase in knowledge about NWM.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	100	118

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Concentrations of phosphorous in the soil have increased; continuing to increase jeopardizes soil and water quality and soil productivity.

What has been done

Compost use by producers can export nutrients farther away from dairies and provide needed fertility for crop production. Field trial results using compost were presented.

Results

Professional and producer knowledge of compost use for crop production increased.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
133	Pollution Prevention and Mitigation
205	Plant Management Systems
403	Waste Disposal, Recycling, and Reuse
601	Economics of Agricultural Production and Farm Management

Outcome #3

1. Outcome Measures

O: An increase in the number of trained graduate students prepared to enter the workforce. I: Number of M.S. and Ph.D. candidates relevant to this topic team.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	6

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
102	Soil, Plant, Water, Nutrient Relationships
133	Pollution Prevention and Mitigation
205	Plant Management Systems
403	Waste Disposal, Recycling, and Reuse
601	Economics of Agricultural Production and Farm Management

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Public Policy changes
- Government Regulations

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)

Evaluation Results

Key Items of Evaluation