

V(A). Planned Program (Summary)

Program # 12

1. Name of the Planned Program

Potatoes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	15%		10%	
201	Plant Genome, Genetics, and Genetic Mechanisms	5%		10%	
202	Plant Genetic Resources	5%		10%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	5%		10%	
204	Plant Product Quality and Utility (Preharvest)	5%		10%	
205	Plant Management Systems	15%		10%	
212	Pathogens and Nematodes Affecting Plants	15%		10%	
216	Integrated Pest Management Systems	15%		10%	
503	Quality Maintenance in Storing and Marketing Food Products	15%		10%	
603	Market Economics	5%		10%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2011	Extension		Research	
	1862	1890	1862	1890
Plan	2.5	0.0	9.0	0.0
Actual Paid Professional	3.7	0.0	10.0	0.0
Actual Volunteer	0.0	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
189271	0	264763	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
189271	0	264763	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
11007	0	5358914	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Potato Team is highly integrated, participating in active projects to discover new knowledge, demonstrate and transfer new technologies, and work to understand local variants that impact potato production and storage. Members of the Team meet regularly and otherwise collaborate with industry associations and the Idaho Potato Commission to understand needs of stakeholders. Research and Extension activities include pest management studies and information dissemination (Potato Viruses X and Y, wireworm, Late Blight, and Early Blight), field and greenhouse experiments to understand the ecology and treatment options for serious potato pests in the field and in storage, nutrient management questions, and the value of various soil amendments. Field demonstrations help growers and other stakeholders understand the impact of various planting and pest management practices and irrigation needs and strategies. These applied activities have been shared through the Idaho Potato Conference as well as a host of workshops and classes and numerous field days and tours. Faculty produced an array of refereed and Extension publications and publications in various trade journals and targeted media. Much of the Extension faculty's work is made possible through collaborations and participation on various citizen and professional alliances concerned with environmental quality and agricultural sustainability.

2. Brief description of the target audience

Target audiences included were potato growers, field agronomists, consultants, industry representatives from the seed, processing and fresh market sectors, and chemical company representatives.

3. How was eXtension used?

unknown

V(E). Planned Program (Outputs)

1. Standard output measures

2011	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	7777	106985	156	177

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

Patent Applications Submitted

Year: 2011

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2011	Extension	Research	Total
Actual	13	50	63

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Workshops and Seminars.

Year	Actual
2011	0

Output #2

Output Measure

- Popular Press Articles.
Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Field Days.

Year	Actual
2011	8

Output #4

Output Measure

- Individual Consultations.

Year	Actual
2011	303

Output #5

Output Measure

- Graduate Students.

Year	Actual
2011	7

Output #6

Output Measure

- Professional Meetings.
Not reporting on this Output for this Annual Report

Output #7

Output Measure

- Email Information Dissemination.

Year	Actual
2011	426

Output #8

Output Measure

- Number of seminars, workshops, and field day presentations

Year	Actual
2011	72

Output #9

Output Measure

- Articles in Trade Journals

Year	Actual
2011	47

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	O: Growers apply best potato management practices. I: Number of growers adopting recommended practices
2	O: Growers are aware of pest incidence. I: Number of Subscribers to pest alert website
3	O: Growers are knowledgeable about best potato management practices. I: Number of participants attending educational programs.
4	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: Growers apply best potato management practices. I: Number of growers adopting recommended practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	400

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Potato virus Y in seed potatoes. Potato virus Y can lead to yield and quality reductions in commercial potatoes. Seed and commercial growers as well as process and fresh potato buyers are very concerned about internal tuber defects caused by the new tuber necrotic strains of this virus.

What has been done

Extension presentations and magazine articles were delivered stressing the importance of very low levels of potato virus Y in the seed potatoes used for both seed and commercial production.

Results

The amount of PVY in Idaho seed potatoes has gone down by more than 20% over the last 4 years.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
202	Plant Genetic Resources
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
204	Plant Product Quality and Utility (Preharvest)
205	Plant Management Systems
212	Pathogens and Nematodes Affecting Plants
216	Integrated Pest Management Systems
503	Quality Maintenance in Storing and Marketing Food Products

603 Market Economics

Outcome #2

1. Outcome Measures

O: Growers are aware of pest incidence. I: Number of Subscribers to pest alert website

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

O: Growers are knowledgeable about best potato management practices. I: Number of participants attending educational programs.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2011	406

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A study was initiated to evaluate the usefulness of serological disease detection test kits to rapidly and accurately diagnose diseases in the field and storage. Information from this study will enable growers and fieldmen to efficiently diagnose certain potato diseases using visual symptoms and disease detection kits and allow for quick decision making regarding proper identification and control.

What has been done

Information was presented at numerous workshops, presentations, and disseminated in proceeding and trade journal articles. A presentation was made at the 2011 Potato Association of America meeting on "Utilizing Pathogen Detection Test Kits for Rapid In-field Potato virus Y Diagnosis". An Annual Extension Conference presentation was made and test kits and explanation of use was disseminated to Idaho county extension educators for grower submitted sample identification in their counties.

Results

Survey and verbal comments from fieldmen have indicated the successful use of these test kits in the field and storage. Results from the 2011 University of Idaho Potato Conference survey indicated of the 4 respondents, 4 out of 4 learned something at the workshop. Approximately 100 people attended the workshop.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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Outcome #4

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	Actual
2011	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

{No Data Entered}

What has been done

{No Data Entered}

Results

{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
202	Plant Genetic Resources
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
204	Plant Product Quality and Utility (Preharvest)
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V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Other (unusual weather)

Brief Explanation

Due to a wet and cool spring, growers have had to spend capital on fungicide. The lack of ample heat units and sudden temperature increase created a major physiological potato disorder, resulting in a high demand for on-farm calls and consultations with growers to overcome the problems. Harvesting problems were created by a higher than average rainfall. The growers are unable to operate their machinery therefore causing an increase in the cost of labor and overall harvest costs. Educator and growers are discussing alternative harvest methods.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

An important outcome is the continuing decrease in potato virus Y (PVY) in the Idaho seed potato system. In 2007, 60% of the seed lots in the Idaho Seed Potato system contained some level of PVY and 27% of the lots contained more than 2% PVY and could not be increased for any additional years (the industry term for this is "ineligible for recertification"). For the 2010 season, the percentage of seed lots with some PVY is down to 40% and the percentage of lots ineligible for recertification is down to only 8%. Because of our extension and research activities targeting the reduction of PVY, Idaho seed potatoes are now some of the highest quality seed available in North America.

Key Items of Evaluation

