

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Global Food Security and Hunger

Reporting on this Program

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	8%			
111	Conservation and Efficient Use of Water	8%			
121	Management of Range Resources	8%			
205	Plant Management Systems	8%			
211	Insects, Mites, and Other Arthropods Affecting Plants	7%			
212	Pathogens and Nematodes Affecting Plants	8%			
213	Weeds Affecting Plants	7%			
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	7%			
215	Biological Control of Pests Affecting Plants	8%			
216	Integrated Pest Management Systems	8%			
307	Animal Management Systems	8%			
311	Animal Diseases	6%			
901	Program and Project Design, and Statistics	3%			
902	Administration of Projects and Programs	3%			
903	Communication, Education, and Information Delivery	3%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	63.0	0.0	0.0	0.0
Actual Paid Professional	58.6	0.0	0.0	0.0
Actual Volunteer	4725.0	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
2066295	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
2066295	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
347498	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Organic, value-added, and technological approaches complement conventional agriculture. By utilizing contemporary tools in agronomy, animal or soil science, plant nutrition, pest management, and pesticide safety, this program will disseminate improved practices and enhance the potential use of alternative crops, reduce soil erosion, reduce the economic, social, and environmental costs of crop pests, and maintain or increase soil health. Animal systems will reduce wastes and discharges while improving productivity and management techniques.

Extension agriculture also will look at key areas of various social changes in the marketplace impacting producers, retailers and consumers. We aim to disseminate information on (1) how technology impacts the market place, with a special emphasis on rural markets in Oregon; (2) improving the well-being of consumers; and (3) development of economic linkages at every level of the supply chain for community development.

2. Brief description of the target audience

- Professional peers and scientific communities, Extension faculty, veterinarians, vaccine producers;
- State commodity commissions, grower groups, packers, crop consultants;
- Wholesale and retail suppliers to the agricultural sector, seed producers and distributors
- Natural resource industry clientele - growers, farm workers, field representatives, grower co-ops and partnerships;
 - Processors and handlers, export - import sectors;
 - County, state and federal agencies - USDA-ARS, Oregon Department of Agriculture, Natural Resources, others;
 - Conservation Service, Bureau of Indian Affairs, Confederated Tribes of the Umatilla Indian Reservation, US Forest Service; and Bureau of Land Management;
 - Policy makers, public health officials, and community leaders;
 - Teachers and students, Extension personnel and other educators;
 - Genetic companies;
 - Nutritional consultants;

- Nonprofit conservation groups and ecologists;
- Food system participants, the general public and consumers.

3. How was eXtension used?

In 2012, Oregon's use of Ask an Expert continued to grow across the 36 counties, with 3111 questions answered in the system. Oregon ranks third in the nation for Ask an Expert activity, only a horse's nose behind 2nd busiest Colorado. Question response time remains less than 40 hours, well below the 48 hour target suggested nationally.

Over 130 Extension faculty and staff and some thirty Master Gardener volunteers are actively answering questions from both Oregon and beyond.

Ask an Expert Question of the Week--developed at OSU-- featured 49 questions in 2012, with 5,476 unique visitors, spending on average over 2 minutes of reading. These featured questions have provided yet another access point for Oregonians to locate science-based answers to issues that matter to them.

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	478950	124620	1175	7440

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

Patent Applications Submitted

Year: 2012

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	38	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Educational Classes Delivered

Year	Actual
2012	586

Output #2

Output Measure

- Number of Workshops Delivered

Year	Actual
2012	176

Output #3

Output Measure

- Number of One-on-one Interventions

Year	Actual
2012	907

Output #4

Output Measure

- Number of Demonstrations

Year	Actual
2012	59

Output #5

Output Measure

- Number of Web Sites Maintained

Year	Actual
2012	12

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Crop Production Systems -- Berry, Viticulture, Tree Fruit & Nut, Vegetable, Field Crops, Nursery, IPM, Organic Production Systems: number of farmers, field reps, and others accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events to improve production efficiencies; pest management; pesticide safety, including better, linguistically appropriate information about pesticide safety; organic and conventional production practices; post-harvest quality; improved cultivars; and to remain competitive in global and local markets.
2	Small Farms: number of small-scale farmers accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events about appropriate management of nutrients and soil runoff; utilization of IPM, biological, or conventional production practices, or selection of new crops; implementation of profitable and diverse scale-appropriate production and value-added processing systems; farmers accessing markets.
3	Gardens, Turf, Landscape: number of farmers, field reps, and others accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events to improve production efficiencies; pest management; pesticide safety, including better, linguistically appropriate information about pesticide safety; organic and conventional production practices; post-harvest quality; improved cultivars; and to remain competitive in global and local markets.
4	Livestock, Rangeland and Watershed Management, Dairy: number of farmers, ranchers and land managers, accessing or applying prescribed feeding methods; practices that increase birth weights and survival of offspring; specific management techniques such as early weaning, improved herd or flock health; improved production efficiency and beef quality parameters; practices with the intent to enhance water and soil quality or practices that favor appropriate plant communities and do not allow for accelerated erosion.
5	Number of public policy makers and other interested stakeholders will be better informed about the science basis of policy options when crafting policy related to land use, production agriculture, alternative marketing channels, public and private recreational lands, rangeland and other public lands, urbanized watersheds, and other agricultural policy issues.

Outcome #1

1. Outcome Measures

Crop Production Systems -- Berry, Viticulture, Tree Fruit & Nut, Vegetable, Field Crops, Nursery, IPM, Organic Production Systems: number of farmers, field reps, and others accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events to improve production efficiencies; pest management; pesticide safety, including better, linguistically appropriate information about pesticide safety; organic and conventional production practices; post-harvest quality; improved cultivars; and to remain competitive in global and local markets.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	2341

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In 2009, Oregon's farmers sold more than \$260 million of wheat, making it the state's fourth-largest agricultural commodity. Keeping yields high and costs down continues to be the farmer's perpetual challenge.

What has been done

Oregon's farmers planted about a million acres of wheat in 2010, more than half of which was blanketed by varieties developed by Oregon State University. Its wheat breeding program has been at work for more than a century, and its researchers have developed dozens of varieties adapted to Oregon's diverse growing conditions. Fruits of their labor include Goetze, a variety well-suited for the Willamette Valley; high-yielding Tubbs and Tubbs 06; and ORCF 101 and ORCF 102, which were bred to resist a particular herbicide. ORCF 101 is the most widely planted wheat variety in Oregon, accounting for almost 20 percent of the state's wheat acreage.

Results

OSU's winter wheat varieties have increased Oregon yields by at least two bushels per acre in recent years. At \$6 per bushel, this means an additional \$10 million for Oregon wheat growers each year.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
214	Vertebrates, Mollusks, and Other Pests Affecting Plants
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems
901	Program and Project Design, and Statistics
902	Administration of Projects and Programs
903	Communication, Education, and Information Delivery

Outcome #2

1. Outcome Measures

Small Farms: number of small-scale farmers accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events about appropriate management of nutrients and soil runoff; utilization of IPM, biological, or conventional production practices, or selection of new crops; implementation of profitable and diverse scale-appropriate production and value-added processing systems; farmers accessing markets.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	534

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Small farming is no small thing in Oregon. In the space of a generation, farmers and food advocates in Oregon have changed the menu, the land, and the economies of communities from downtown Portland to the Rogue River.

What has been done

Extension conducts direct marketing research and delivers outreach education in support of Oregon direct farm marketing. Direct farm marketing is becoming a big part of Oregon agriculture

and small farms see bigger profits by selling direct to consumers.

Results

According to the most recent USDA Census of Agricultural, 6,274 Oregon farms sold products directly to consumers, with total sales of \$56 million. This is a 144 percent increase over the \$21 million in farm direct sales reported in the 2002 Census.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
214	Vertebrates, Mollusks, and Other Pests Affecting Plants
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems
307	Animal Management Systems
311	Animal Diseases
901	Program and Project Design, and Statistics
902	Administration of Projects and Programs
903	Communication, Education, and Information Delivery

Outcome #3

1. Outcome Measures

Gardens, Turf, Landscape: number of farmers, field reps, and others accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events to improve production efficiencies; pest management; pesticide safety, including better, linguistically appropriate information about pesticide safety; organic and conventional production practices; post-harvest quality; improved cultivars; and to remain competitive in global and local markets.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	7093

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The Master Gardener program in Jackson and Josephine Counties recruits and trains volunteers each year to assist Extension clientele with home garden questions. The challenge with this program is to increase the level of knowledge of the volunteers significantly over a relatively short period of time to enable them to effectively deal with clientele questions.

What has been done

In 2012 845 individuals from Jackson and Josephine counties enrolled in the classroom portion of training over 12-13 weeks from January to April. Additionally, participants were required to complete at least 70 educational service hours between January and October.

Results

The initial survey of the volunteers following the training shows statistically significant increases in knowledge and understanding in all areas surveyed. This includes understanding of soil properties, fertilizer use, entomology, integrated pest management, pesticide use and safety, disease management, plant problem diagnosis, and plant physiology. The follow-up survey revealed that survey participants had changed significant areas of their gardening practices, including increasing recycling of organic matter, reading fertilizer labels to ensure correct use, reading pesticide labels carefully to ensure correct use, changing sanitation practices in the garden to reduce disease, ensuring the cause of a plant problem before utilizing some sort of control, implementing integrated pest management principles and monitoring water use more carefully. In addition, Master Gardeners donated over 135,770 documented pounds of fresh produce, harvested from Master Gardener-managed community and demonstration gardens in the two-county region, to local food banks and food pantries.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
214	Vertebrates, Mollusks, and Other Pests Affecting Plants
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems
901	Program and Project Design, and Statistics
902	Administration of Projects and Programs

903 Communication, Education, and Information Delivery

Outcome #4

1. Outcome Measures

Livestock, Rangeland and Watershed Management, Dairy: number of farmers, ranchers and land managers, accessing or applying prescribed feeding methods; practices that increase birth weights and survival of offspring; specific management techniques such as early weaning, improved herd or flock health; improved production efficiency and beef quality parameters; practices with the intent to enhance water and soil quality or practices that favor appropriate plant communities and do not allow for accelerated erosion.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	1085

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The state's dairy industry contributes more than \$1 billion to Oregon's economy each year thanks to its approximately 350 dairy farms and 120,000 dairy cows. Establishment of an artisan cheese industry gives dairy producers the opportunity to earn greater returns for specialty products they make on their farms

What has been done

Extension educators provide training for all levels of artisan cheese makers, including assistance with improvements in product quality, shelf-life, and safety. Extension specialists consult closely with individual cheese makers to solve specific challenges, and serve as technical advisors for the Oregon Dept. of Agriculture's Food Safety Division

Results

Extension food technology educators helped launch and sustain the development of an Oregon artisan cheese industry that has grown from just two operations in 1999 to 21 artisan cheese producing outlets today. In 2012 Oregon artisan cheese producers earned \$16 million in farm gate sales for their products. Oregon's artisan cheese is experiencing the same growth achieved by Oregon's wine industry.

4. Associated Knowledge Areas

KA Code Knowledge Area

102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
121	Management of Range Resources
205	Plant Management Systems
213	Weeds Affecting Plants
307	Animal Management Systems
311	Animal Diseases
901	Program and Project Design, and Statistics
902	Administration of Projects and Programs
903	Communication, Education, and Information Delivery

Outcome #5

1. Outcome Measures

Number of public policy makers and other interested stakeholders will be better informed about the science basis of policy options when crafting policy related to land use, production agriculture, alternative marketing channels, public and private recreational lands, rangeland and other public lands, urbanized watersheds, and other agricultural policy issues.

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

This planned program of Global Food Security and Hunger remains a robust and active area for OSU Extension; however, it was hit the hardest during the economic down turn. A disproportionate number of long-tenured faculty members worked in this area and many retired in past 12 months. As we manage reduced resources, attrition plays a key role in balancing the budget and that means there are gaps in Extension's ability to address global food security and hunger. During this past year, efforts focused primarily on helping producers to be productive and environmentally sound. Little time was devoted to assisting policymakers and community stakeholders to be better informed about agricultural policy issues; however, results from current work on rangeland issues related to wolves and grouse will be valuable science-based information for policy makers as they craft future policies on land use, public and private recreational lands, and grazing access.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Industry trends and data on production practices were monitored; input and equipment were tracked as an indicator of adoption of some practices; case study measurements of soil and water quality provided an indication of progress; producer surveys also provided an indication of adoption

Key Items of Evaluation

- OSU's winter wheat varieties have increased Oregon yields by at least two bushels per acre in recent years. At \$6 per bushel, this means an additional \$10 million for Oregon wheat growers each year.
- According to the most recent USDA Census of Agricultural, 6,274 Oregon farms sold products directly to consumers, with total sales of \$56 million. Thanks in part to Extension direct marketing research and outreach education this is a 144 percent increase over the \$21 million in farm direct sales reported in the 2002 Census.
- Extension food technology educators helped launch and sustain the development of an Oregon artisan cheese industry that has grown from just two operations in 1999 to 21 artisan cheese producing outlets today. In 2012 Oregon artisan cheese producers earned \$16 million in farm gate sales for their products.