Basic Plant Biology & Related Topics for Horticulture

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V(A). Planned Program (Summary)

1. Name of the Planned Program

Basic Plant Biology & Related Topics for Horticulture

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
201	Plant Genome, Genetics, and Genetic Mechanisms			40%	
204	Plant Product Quality and Utility (Preharvest)			20%	
206	Basic Plant Biology			40%	
	Total			100%	

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	5.3	0.0
Actual	0.0	0.0	5.3	0.0

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

Extension		Research	
Smith-Lever 3b & 3c 0	1890 Extension 0	Hatch 426712	Evans-Allen 0
1862 Matching 0	1890 Matching 0	1862 Matching 1215582	1890 Matching 0
1862 All Other 0	1890 All Other 0	1862 All Other 1396441	1890 All Other 0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Conduct Research Experiments.
- Conduct Workshops, meetings.
- Deliver Services.
- Develop Products, Curriculum, Resources. (including cultivars and pollinizers)- Provide Training.
- Assessments.
- Partnering.

2. Brief description of the target audience

Colleagues in the department, university, and USDA on campus; research peers nationally and internationally; students (undergraduates and graduate students or post-docs); commodity commissions; and potential businesses in Oregon.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	**Target**	**Target**	**Target**	**Target**
Plan	0	0	0	0
2008	0	0	0	0

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

Patent Applications Submitted

Year	**Target**
Plan:	2
2008:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	**Research**	**Total**
Plan	0	20	
2008	0	9	9

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

CARRY OUT STUDIES TO DECIPHER GENOMES, GENETICS AND MECHANISMS OF PLANTS AND ANIMALS - disease resistance - defense pathways - transgenic lines ofr higher tolerances, e.g., freezing, morphology and yields - microarray analysis of genes

Year	Target	Actual
2008	5	2

Output #2

Output Measure

SCHOLARLY excellence through refereed articles, conference papers, competitive proposals, organizing scientific meetings, serve on scientific panels and national boards.

Year	Target	Actual
2008	20	45

Output #3

Output Measure

DEVELOP BREEDING PROGRAMS THAT RESULT IN DESIRABLE TRAITS, CULTIVARS AND VARIETIES - hazelnut - beans - snap pea - tomato - apples - broccoli - organic lines

Year	Target	Actual
2008	10	1

Output #4

Output Measure

DEVELOP BETTER UNDERSTANDING OF BASIC PHYSIOLOGY OF PLANTS AND ANIMALS (percent) - seed development and germination - seed development-associated genes and homologues of these genes

Year	Target	Actual
2008	5	5

Output #5

Output Measure

DEVELOP IMPROVED ANIMAL AND PLANT PRODUCTION SYSTEMS - precision management systems in vineyards, with nutrition component

Year	Target	Actual
2008	5	0

V(G). State Defined Outcomes

O No.	Outcome Name
1	Peers learn about genes and genetic resources for breeding, new sources of resistance
2	Growers learn about new hazelnut cultivars with novel attributes and greatest potential for production in the Pacific Northwest; variety trials published online allow growers to access information quickly
3	Peers are made aware of the antioxidant effects of various carotenoids and flavonoids, and that flavonoids have a significantly greater impact on antioxidant effect compared to carotenoids; while stakeholders are given additional new knowledge about human health benefits, disease resistance, and breeding for organic systems of vegetables.
4	Growers are more aware of issues related to precision horticulture, mineral nutrition, and fundamental aspects of data analysis.
5	Natural resource industry gains basic understanding of restoration processes in Pacific wetlands and riparian habitat, of the ecosystem services associated with these restorations, and of conservation bio-control strategies. Also, the conservation sector is made aware of a user-friendly tool to assess ecosystem services.
6	Adoption of new varietals and cultivars reduce yield losses and expenses, rejuvenate orchards and achieve better productivity and efficiency: Breeders incorporate Botrytis and Sclerotinia resistance genes into crop species via traditional breeding or transgenic plants to reduce yield losses and expenses for chemical fungicides. Growers plant transgenic frost-tolerant potato varieties Growers establish new orchards with plantings of EFB resistant cultivars to reduce production costs and provide environmental benefits (less fungicide applications, etc.), micropropagate instead of grafting and layering to propagate larger numbers of trees in shorter time, and Oregon's hazelnut industry is able to effectively compete on world market with new varieties Commercial processors and fresh market growers, as well as home gardeners, achieve greater production efficiency, more stable productivity, and reduced costs from the use of improved varieties.
7	Conservation bio-control strategies are implemented differently and active restoration strategies occur. Land owners and managers assess ecosystem services provided by their riparian restorations via a user-friendly web tool.
8	Increased potato yield will increase potato farmers' income as well as the stability of potato production of the world. The potential increase from 29,000 acres to as much as 100,000 acres will increase Oregon's market share and economic benefits.
9	Plant disease resistance will lower the amount of pesticide use, resulting in a more healthful environment and reduced exposure of humans to hazardous chemicals.
10	Better ecological methodologies will lead to more social, economic, and environmental benefits and cost effective and sustainable restoration. Improved valuation of ecological services associated with restorations will greatly facilitate market-based conservation practices such as mitigation banking and effluent trading. Better conservation bio-control strategies will decrease the costs associated with insect losses and the use of insecticides.

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Outcome #1

1. Outcome Measures

Not reporting on this Outcome for this Annual Report

2. Associated Institution Types

3a. Outcome Type:

3b. Quantitative Outcome

Year	Quantitative Target	Actual

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area

V(H). Planned Program (External Factors)

External factors which affected outcomes

Economy
Appropriations changes
Public Policy changes
Competing Public priorities
Competing Programmatic Challenges

Brief Explanation

{No Data Entered}

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

1. Evaluation Studies Planned

After Only (post program)
Retrospective (post program)
During (during program)
Case Study
Comparisons between program participants (individuals,group,organizations) and non-participants
Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.

Evaluation Results

{No Data Entered}

Key Items of Evaluation

{No Data Entered}