

# Horticultural Management Systems

Horticultural Management Systems

## V(A). Planned Program (Summary)

### 1. Name of the Planned Program

Horticultural Management Systems

## V(B). Program Knowledge Area(s)

### 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
205	Plant Management Systems	65%		65%	
216	Integrated Pest Management Systems	35%		35%	
<b>Total</b>		100%		100%	

## V(C). Planned Program (Inputs)

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

Year: 2007	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	24.1	0.0	6.8	0.0
<b>Actual</b>	24.0	0.0	6.8	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
0	0	143718	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	1611762	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	1303684	0

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

The ultimate goal of this program is to integrate practices, cultivars, and technologies to achieve greater efficiencies, integrated pest management, ecological and organic production, and products that meet market and consumer demand while considering impacts on the environment, worker protection, human health and livelihoods. The production subprogram improved horticultural production efficiencies with high density blueberry and cherry plantings combined with appropriate pruning or training techniques, new hazelnut cultivars resistant to eastern filbert blight, early season cane pruning of blackberry, water conservation in nursery production systems, ecosystem services such as pollinator habitat in gardens and landscapes and sustainable viticulture systems. The IPM subprogram has developed systems using cover crops, tillage and timing of cultural practices to alter pest incidence in vegetable crop rotations, including carabid beetles that cache and consume weed seed. Regional and or automated pest forecasting systems were improved for insects and disease monitoring. Insects causing "short shoot syndrome" in vineyards were identified along with cultural and control practices. Hazelnut cultivars that resist eastern filbert blight and exhibit improved kernel quality are being propagated in commercial nurseries for planting throughout Oregon. The organic subprogram was extended with a participatory on-farm potato project highlighting variety taste tests, a nitrogen calculator, a legume-based cover crop trial, a mustard interplant trial to control dandelion and sowthistle in strawberries, a soil biology and health study involving amendments in orchard systems, and a launch of eOrganic as a national website to share information and technology. Information was disseminated through peer-reviewed journals, presentations at national meeting and field days and through extension activities.

**2. Brief description of the target audience**

Farm/crop/landscape managers, professional field representatives, students (undergraduates and graduate students or post-docs); commodity commissions, gardeners/Master Gardeners™; colleagues in the department, university, and USDA on campus; certification groups, NGOs, peers nationally and internationally, and agency personnel. ..(horticulture, woodlots, and animal management with emphasis on pest management and organic practices for local markets)

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

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

	<b>Direct Contacts Adults</b>	<b>Indirect Contacts Adults</b>	<b>Direct Contacts Youth</b>	<b>Indirect Contacts Youth</b>
<b>Year</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>
<b>Plan</b>	23170	7230250	210	0
2007	0	0	0	0

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

**Patent Applications Submitted**

<b>Year</b>	<b>Target</b>
<b>Plan:</b>	0
2007:	0

**Patents listed**

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

	<b>Extension</b>	<b>Research</b>	<b>Total</b>
<b>Plan</b>			
2007	3	14	17

**V(F). State Defined Outputs****Output Target****Output #1****Output Measure**

SCHOLARLY excellence in referred articles, book chapters, and books; participation on professional boards and panels, as well as science panels.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	10	25

**Output #2****Output Measure**

DEVELOP AND ENHANCE VOLUNTEER PROGRAMS FOR BROADER APPLICATION OF RESEARCH AND EXTENSION INFORMATION - Reach Master Gardners (new, past, and current) through MG training programs and materials, websites, and other distance education programs Year Target benchmark 2007 MG Online Training offered 2008 Assortment of web-based modules developed and adapted for Ecampus to enlarge user groups/revenue. 2009 MG program training offered for credit and/or certification 2010 OSU Urban and Community Horticulture Website refined to reach new audiences and access impact. 2011 'Green' industry uses plants adapted to specific sites and for specific environmental purposes.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	5000	1

**Output #3****Output Measure**

DEVELOP DISTANCE EDUCATION OUTLETS TO FURTHER REACH CLIENTELE. - Develop new databases and 3000 "most asked questions" for eXtension

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	0	1

**Output #4****Output Measure**

DEVELOP IMPROVED ANIMAL AND PLANT PRODUCTION SYSTEMS - Provide growers with improved production efficiency knowledge and practices regarding: ..nutrient budget recommendations ..chemical controls ..complete feasibility study of community based micro processing centers for agricultural products ..off-season production methods ..grafted stock ..water conservation and recycling ..soil quality parameters - Make known to practioners a variety of improved production practices, such as new cultivars for berries, new rootstocks, information on cold hardiness, disease resistance, chemical control of pests available; improved weed management, nitrogen use, water use, - Develop green or organic practices for industry ..prioritize programs 11..green industry uses plants adapted to specific sites and specific environmental purposes 11..ecological orchard systems evaluated ..complete organic cover cropapplied research - Establish statewide small farms extension program with new positions.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	25	20

**Output #5****Output Measure**

PROVIDE ADDITIONAL UNDERSTANDING FOR PLANT AND ANIMAL PROTECTION FROM DISEASES AND PESTS - create, improve or evaluate pest management systems for commodity groups 09..bio-based pest control programs ..disease contained or controled ..weed management with improved herbicides and cultural management

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	0	0

**Output #6****Output Measure**

PROVIDE ECONOMIC AND MARKETING MODELS AND ANALYSES THAT INFORM DECISION-MAKERS, INDUSTRY, AND PEERS - Complete feasibility study of community based micro processing centers for agricultural products

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	0	0

**V(G). State Defined Outcomes**

O No.	Outcome Name
1	Professional turf/landscape managers, nursery retailers, gardeners, and people associated with restoration/conservation projects will learn about sustainable gardening practices (eg. fertilizers, water, and pest management including organic), turf management, horticulture and aboriculture principles and practices, streamside gardening, native plants, invasive species, fire prevention, methods to minimize water runoff and use, wildlife enhancement, conservation and stewardship, and add value and beauty.
2	Practitioners will learn new cultural practices, innovations, pest control, and organic systems to remain competitive. They will also learn marketing approaches for local markets and community food systems. Commercial and non-commercial small farms will regularly utilize a variety of electronic information systems that provide immediate assistance and improve the face to face support when needed.
3	Practitioners will modify current practices to consider sustainable practices and decisions, stewardship of natural resources, and consequences of plants/plant communities in horticultural landscapes, riparian areas, watersheds, and social communities or neighborhoods. Citizens will experience horticultural therapy and health at hospitals, community gardens that feed the poor, recycling of community waste, and projects that engage troubled youth and Master Gardeners™.
4	Growers are expected to adopt improved practices and cultivars Growers are expected to adopt improved, scale-dependent practices selected for various market niches with emphasis on reducing environmental degradation and impact. Commercial small farms will have more diverse and economically viable technologies and production techniques or systems available for their use
5	Ecological landscapes will impact the way Oregonians use and manage plants to create beauty, modify environment, and improve health and well-being of individuals and communities. This program will change the way people use plants to modify their environment such as moderating temperature on buildings, improving water infiltration on surfaces, contributing to ecosystem services at landscape or watershed scales, etc. Environmental change will occur from temperature modifications; enhanced water conservation and wildlife; reduced runoff, fire incidence and pests; improved nutrient use and recycling; and other ecosystem services. Social change will occur through new perceptions of 'green' technologies and social value or capital of horticultural landscapes to enhance human health, therapy, wellness, and social networks. The economic value of landscapes will increase. Cost and benefit analyses of plants usage to modify environments with 'green' technologies will reveal positive economic impacts and improved health and wellness from horticultural therapy.

## Horticultural Management Systems

6	<p>Environmental impacts in food/farm systems include reducing surface and/or groundwater or other pollution in the environment, while improving nutrient and water budgets, and organic production systems. New reduced risk, environmentally safer pest control tools will be available that are target pest specific will facilitate the implementation of IPM programs. Environmental quality will be improved: for nurseries, greenhouse, managed turf areas, and berry farms. through enhanced soil health; improved irrigation, nutrient, and pest management; and organic production systems. for vegetable farms with cover crops, soil quality, reduced tillage, while achieving grape quality and rootstock evaluation, although increasing acreages may be seen as degrading oak savannas in Oregon. in tree fruit orchards, including high density orchards, through the release of hazelnut cultivars that resist Eastern Filbert blight and integrated and organic fruit production practices. on small acreage livestock and horticulture farms with adoption of environmentally sound management practices. Social impacts include consumer awareness and appreciation of the abundance of locally grown ornamental plant materials and native species for use in landscapes will increase; also awareness of invasive species. Social change will enhance quality of life in rural areas by improving economic stability of family farms, wineries, wine tasting, and tourism with new practices and cropping systems and/or livestock management practices/systems. Social change will improve economic stability of families and quality of life with improved cropping systems. Worker safety with bio-based pest control and dwarf rootstocks (short ladders) will be improved; farm workers will find other employment with increased mechanization. Local and community markets increase social networking in rural communities. Economic impacts include reduced costs, increased benefits, and production efficiencies from use of water and nutrient budgets in recycled water systems, improved pest management, and diagnosis of plant problems to increase sales of quality products. Costs of regulatory procedures will be reduced with water and nutrient budgets and management systems. Profitability of berry crops in Oregon is expected to improve as new cropping systems, cultivars, practices, and efficiencies are implemented. Machine harvest technologies will be adapted or developed for Oregon to reduce production costs and improve competitiveness in global markets. Profitability of vegetable and specialized seed crops is expected to improve as new cropping systems, cover crops, nitrogen management, reduced tillage, and cultivars are adopted by growers. Communication networks will enable timely communication and utilization of technologies to alert growers of weather related pest incidence, educational events, and practices. Profitability of viticulture in Oregon is expected to improve as new cropping systems, cultivars, practices, and efficiencies are implemented. Niche markets, wine tasting, and tourism are primary outlets for Oregon wines. Profitability of tree fruits and nut crops in Oregon is expected to improve as new cropping systems, cultivars, practices, and efficiencies are implemented. High density orchards are expected to improve production efficiencies and increase markets. Economic viability of farmers markets will be enhanced by utilizing the results of market conducted consumer research. Applied research and education programs and community food systems will be fostered with products produced and sold locally.</p>
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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
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**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
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**V(H). Planned Program (External Factors)**

**External factors which affected outcomes**

Natural Disasters (drought, weather extremes, etc.)

Economy

Appropriations changes

Public Policy changes

Government Regulations

Competing Public priorities

Competing Programmatic Challenges

Populations changes (immigration, new cultural groupings, etc.)

Other (university/college policies)

**Brief Explanation**

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

**1. Evaluation Studies Planned**

Retrospective (post program)

During (during program)

**Evaluation Results**

**Key Items of Evaluation**