

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Home Horticulture and Environment

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
101	Appraisal of Soil Resources	18%			
205	Plant Management Systems	22%			
211	Insects, Mites, and Other Arthropods Affecting Plants	19%			
212	Pathogens and Nematodes Affecting Plants	10%			
213	Weeds Affecting Plants	6%			
216	Integrated Pest Management Systems	25%			
	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	9.0	0.0	0.0	0.0
Actual Paid Professional	11.0	0.0	0.0	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
460793	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
407947	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Some of the major activities under this program are Master Gardener training (core course), advanced Master Gardener training, Garden 'N Grow training and workshops for garden center employees. Other activities include the Plants of Merit and HortLine programs in cooperation with Missouri Botanical Gardens, homeowner workshops, Lifespan Learners Series, Responsible Home Horticulture Series, booths at home shows and fairs, Plant a Row for the Hungry and Horticulture Therapy in Nursing Homes.

2. Brief description of the target audience

The ultimate target audience of this program is individuals with an interest in gardening. However, to reach this diverse and highly dispersed audience, MU Extension will need to use several community multipliers of information. One highly important audience will be the Master Gardener volunteers. After receiving training, Master Gardeners contribute volunteer hours to assist with dissemination of horticultural information through speaking engagements, workshops, information booths, youth programs, Extension Center hot lines, demonstration plantings and other activities. Youth groups including 4-H are another important target audience. Many young people will enroll in the Garden 'N Grow program.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	7993	9460	542	239

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	7	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Provide in-service training session (s) for regional Extension specialists on an annual basis.

Year	Actual
2012	4

Output #2

Output Measure

- Develop or revise guide sheets a year for regional extension specialists to use in producer meetings.

Year	Actual
2012	13

Output #3

Output Measure

- Print and electronic newsletters devoted to pest and horticulture crop management will be developed and distributed to regional specialists and other clientele.

Year	Actual
2012	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Master Gardeners, garden center employees, retired persons and home gardeners will increase their knowledge of basic plant growth, fertility, plant care, varieties, diseases.
2	4-H members & youth will improve their gardening skills and awareness of where food comes from through the Garden & Grow program.
3	Increase the number of Missourians participating in gardening activities.
4	Increase use of soil sampling and plant diagnostic services by home gardeners.
5	Increase the number of Master Gardner volunteer hours and contacts.

Outcome #1

1. Outcome Measures

Master Gardeners, garden center employees, retired persons and home gardeners will increase their knowledge of basic plant growth, fertility, plant care, varieties, diseases.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	17543

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Selecting poorly adapted plants for home gardens can lead to frustration and may discourage people from future gardening activity. Awareness of sources of information on proper plant selection will contribute to gardening success and the health benefits derived from it. Also, proper plant selection reduces plant stress, which then reduces the amount of inputs necessary to maintain plant health. This can lead to a reduction in fertilizer and pesticides necessary to maintain plant health.

What has been done

Through Master Gardener (MG) training and volunteer activities of MG's, newsletter, media releases, Nursery Association Certification training, greenhouse short courses and web guide access, thousands of Missourians received information on plant selection and culture. We hosted a Native Plant Field Day and a Tomato Festival.

Results

Of 984,384 valid hits on all MU agricultural guides from January 1 to December 31, 2012, 49% were horticulture guides. Horticulture and pests accounted for over 60% of the ag guide hits for the period. The most popular horticulture guides were on composting, pruning shrubs, raised bed gardening, roses and vegetable production. Thus, thousands of Missourians received information to help them improve their gardening success. If 10 percent of those receiving Home Horticulture information increase their purchasing of plants, gardening supplies and landscape services by one hundred dollars due to Extension activities, this would translate to a \$5 million increase in sales.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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101	Appraisal of Soil Resources
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

Outcome #2

1. Outcome Measures

4-H members & youth will improve their gardening skills and awareness of where food comes from through the Garden & Grow program.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	782

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Youth gardening programs, including Garden 'n Grow, are intended to cultivate strong skills in science through the curriculum. The goals are also for youth to experience gardening in a positive and fun method, to enjoy the feeling of success with their gardening efforts, and to have the satisfaction of sharing their harvested produce with others in need. Youth also learn to produce healthy food and the importance of fresh produce in human nutrition.

What has been done

Garden 'n Grow was hosted in three locations throughout Missouri, in which volunteers work with school children to help them plant, manage and harvest vegetable plots.

Results

Evaluation results for one of the youth groups that participated in the Garden and Grow program found that:

- 100% of the youth indicated that "I can select vegetable plants and seeds and plant a garden on my own or with some assistance".
- 100% indicated "I know what vegetables are in a 3 sisters garden".
- 100% indicated "I know what vegetable grows up a teepee".

- 80% indicated "I can recognize squash bug eggs on a leaf".
- 90% indicated "I can name at least three plant parts and describe their function"
- 80% indicated "I know why it's important to donate extra produce to a food pantry".
- 100% indicated "I have learned some ways to cook my produce".
- 100% indicated "I understand why it is important to eat fresh vegetables"

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

Outcome #3

1. Outcome Measures

Increase the number of Missourians participating in gardening activities.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	8535

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Beneficial effects of gardening on human quality of life are well documented. Among other benefits, home gardening improves nutrition, reduces energy costs, encourages physical activity and contributes to psychological well being. Missourians who garden are likely to derive these benefits for their entire lives.

What has been done

Through Master Gardener training, Master Gardener volunteer activities, press releases, radio spots, web and print guides, field days and many other activities, thousands of Missourians gain information that will make them more likely to participate in gardening activities.

Results

Ninety-eight percent of the two hundred participants that attended the Ozark Spring Gardening Workshop indicated that the program met or exceeded their expectations. MU Extension faculty on averaged assisted more than hundred clients per month with questions pertaining to various horticulture topics such as drought, watering crops, harvesting vegetables and fruit, soil, composting, insect identification, tree and shrub diseases and disorders. Post composting workshop surveys found that 88% of the participants had started composting and they indicated they were saving between \$100 to more than \$200/year by composting. The most popular horticulture guides were on composting, pruning shrubs, raised bed gardening, roses and vegetable production.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

Outcome #4

1. Outcome Measures

Increase use of soil sampling and plant diagnostic services by home gardeners.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	4322

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

A recent summary of urban soil samples from the St. Louis and Kansas City areas showed that the majority of samples tested high or very high in soil phosphorus, which poses a threat to water quality. Increased soil testing will reduce the unintentional over-application of fertilizer. Workshops

to enhance environmental stewardship by homeowners and/or lawncare and horticulture industry professionals which helps to reduce unnecessary use of pesticide and fertilizer.

What has been done

We have created a program in Missouri, Healthy Yards for Clear Streams, that focus on training regional specialists to educate homeowners and/or lawncare professionals to change management practices of lawns, gardens and landscapes. This, in addition to Master Gardener outreach efforts, media releases and web guide access encouraged environmentally responsible gardening activity.

Results

The number of lawn and garden soil samples submitted to the MU Soil and Plant Testing Lab was 4322. The Plant Diagnostic Clinic was not in operation, due to the resignation of the lab director.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

Outcome #5

1. Outcome Measures

Increase the number of Master Gardner volunteer hours and contacts.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	10882

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There continues to be tremendous demand in the general public for gardening information. Many

individuals enroll in the Master Gardener class to have access to this type of training. Once Master Gardeners are trained, they disseminate research based information throughout their county and improve the knowledge base among home gardeners in their community.

What has been done

Regional & campus faculty used multiple educational methods including conducting Master Gardener Core & Advanced training, Master Gardener volunteers developed and implemented community based projects/activities, gardening workshops, assisted garden clubs, conducted FFA &4-H programs, demonstrations, industry training, professional development, developed and distributed press releases, radio spots, web and print guides, field days and many other activities.

Results

Newly trained Master Gardeners are much more aware and able to use and promote the resources of the University of Missouri and MU Extension. They are better educated gardeners, and also more environmentally aware gardeners. They also actively promote the purchase of plants from local garden centers and nursery businesses. During calendar year 2012, Master Gardeners contributed over 68,169 volunteer hours to assist Extension in outreach and to benefit horticulture in their communities. With speakers bureaus, newsletters, booths at home shows and many other venues, Master Gardeners contacted nearly half a million Missourians to provide research based gardening information. Almost all Master Gardeners (98%) reported sharing information with family and friends, and 69% reported sharing information with the general public. Overall, 70% of respondents indicated having participated in at least one of the six outreach activities.

4. Associated Knowledge Areas

KA Code	Knowledge Area
101	Appraisal of Soil Resources
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

Staffing limitation is still a major factor affecting program outcome. Most state Extension Specialists in Horticulture have responsibilities in Teaching, Research and Extension and, therefore, have limited time to devote to this program. Regional Horticulture Specialists have responsibilities in up to 13 counties and in multiple program areas. Budget constraints due to the poor economy and low tax revenues have restricted extension programming. The economic conditions over the past year have undoubtedly influenced the

gardening habits of Missourians. While sales of vegetable seeds are up, purchase of higher cost items such as trees and shrubs has declined, despite Extension programming to encourage their planting.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

This past year an extensive evaluation of the effectiveness and value of the Master Gardener program was conducted by the University's Assessment Resource Center. Over 1,400 Master Gardeners responded to the evaluation questionnaire. Almost all Master Gardeners (98%) reported sharing information with family and friends, and 69% reported sharing information with the general public. Overall, 70% of respondents indicated having participated in at least one of the six outreach activities. In general, participants more often shared information by interacting directly with people than by producing written information.

It is evident from the reception by the gardening public of programs such as Master Gardener Program that there is a tremendous demand for information about gardening. Also, home gardeners are increasingly concerned with the effects of their gardening activities on environmental quality. Furthermore, it is apparent that, given high quality, understandable information, gardeners tend to be willing to change their practices to be more environmentally responsible based on this information. Curriculum developed for the healthy Yards for Clear Streams program will be available for use by anyone doing programming focused on environmentally responsible landscape and garden management. Several groups conducting water quality training have utilized parts of the HYCS curriculum in their programs.

Key Items of Evaluation

Listed above