

V(A). Planned Program (Summary)

Program # 12

1. Name of the Planned Program

Horticultural Systems

- 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	0%	0%	10%	
205	Plant Management Systems	60%	60%	13%	
211	Insects, Mites, and Other Arthropods Affecting Plants	10%	10%	7%	
212	Diseases and Nematodes Affecting Plants	10%	10%	41%	
213	Weeds Affecting Plants	10%	10%	7%	
215	Biological Control of Pests Affecting Plants	0%	0%	4%	
216	Integrated Pest Management Systems	10%	10%	0%	
607	Consumer Economics	0%	0%	4%	
702	Requirements and Function of Nutrients and Other Food Components	0%	0%	14%	
	Total	100%	100%	100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	36.0	5.0	37.0	0.0
Actual Paid	45.0	9.0	26.2	0.0
Actual Volunteer	13.0	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
892188	290403	694288	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
3807248	390403	1741526	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
100000	0	1012726	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

UT AgResearch variety evaluations of different vegetable crops are conducted to determine suitability to climate, soils and cultural practices for state producers. Yields, quality and market potential are evaluated to assess potential production by growers seeking additional crops or alternative crops. Crops suitable for greenhouse production in farmers' tobacco transplant greenhouses are evaluated for profitability and product quality with respect to local and state markets.

UT AgResearch efforts determine the effectiveness of various control technologies, develop new genetic cultivars of plants from in-house breeding programs or, in some cases, find naturally resistant populations of plants by searching the southeast U.S. (i.e. for anthracnose resistant dogwoods). Research is conducted at selected Research and Education Centers across Tennessee, and at several farmer-cooperator locations in key areas of horticultural production in Tennessee. Substantial investments have just been made in construction and renovation of greenhouse facilities on campus and at certain Research and Education Centers. These will be utilized extensively in the conduct of our research.

2. Brief description of the target audience

- Farmers/producers who have traditional livestock and tobacco operations, but are looking to improve income through the Green Industry.
- Master Gardeners who volunteer to provide community service through horticulture.
- Business owners who need research-based information to start, maintain or expand their greenhouse, landscaping, or nursery business.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	403620	20286789	0	0

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

Patent Applications Submitted

Year: 2014

Actual: 1

Patents listed

Cornus kousa 'Pam's Mountain Bouquet', US Plant Patent, revised. Trigiano, R.

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	2	28	30

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Horticultural workshops and conferences.

Year	Actual
2014	25901

Output #2

Output Measure

- Number of exhibits displayed to teach best practices in horticultural systems.

Year	Actual
2014	101

Output #3

Output Measure

- Number of research-based publications distributed as part of this program.

Year	Actual
2014	565

Output #4

Output Measure

- Development of genetic linkage maps for two economically important dogwood species will lay a foundation for marker assisted selection for desirable traits such as, disease resistance, heat tolerance, bract color, and foliage color. (Wadl)

Year	Actual
2014	0

Output #5

Output Measure

- Results from the analysis of population structure and reintroduction of *Pityopsis ruthii* will provide critical information for resource managers in the conservation and recovery of the species. (Trigiano)
Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Demonstrated that foliar applications of Se can increase Se content in Brassica vegetables while still maintaining high levels of glucosinolates. Demonstrated that ITCs from Brassica decreased the growth of Human Colon Cancer cells in vitro and that Se also decreased the cancer cell growth. (Sams)

Year	Actual
2014	0

Output #7

Output Measure

- Currently in the final stages of negotiations with a publically-traded company to sub-license the genetic-variation measurement technology and to work cooperatively to develop novel applications. (Lamour)

Year	Actual
2014	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Consumer Horticulture: Number of consumers who applied fewer fertilizers and pesticides due to a better understanding of landscape best management practices.
2	Consumer Horticulture: Number of consumers who learned about plant selection and proper planting to save money and time in the landscape.
3	Preventing fungal rot in Muscadine grapes. (Trigiano)

Outcome #1

1. Outcome Measures

Consumer Horticulture: Number of consumers who applied fewer fertilizers and pesticides due to a better understanding of landscape best management practices.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	924

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Diseases and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

Outcome #2

1. Outcome Measures

Consumer Horticulture: Number of consumers who learned about plant selection and proper planting to save money and time in the landscape.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	3978

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Diseases and Nematodes Affecting Plants
213	Weeds Affecting Plants
216	Integrated Pest Management Systems

Outcome #3

1. Outcome Measures

Preventing fungal rot in Muscadine grapes. (Trigiano)

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Muscadine grapes have been precision bred to resist fungal rots. We needed to know the fungi involved in the rot process as well as their capacity to cause rots via productions of extracellular enzymes.

What has been done

We can now laboratory test the fungi against the precision bred grapes.

Results

This approach should facilitate faster, more cost-effective testing.

4. Associated Knowledge Areas

KA Code	Knowledge Area
212	Diseases and Nematodes Affecting Plants

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Government Regulations
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

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Key Items of Evaluation