

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Animal 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
123	Management and Sustainability of Forest Resources	0%	0%	1%	
135	Aquatic and Terrestrial Wildlife	0%	0%	1%	
301	Reproductive Performance of Animals	15%	15%	1%	
302	Nutrient Utilization in Animals	0%	0%	1%	
303	Genetic Improvement of Animals	10%	10%	1%	
304	Animal Genome	0%	0%	1%	
305	Animal Physiological Processes	0%	0%	1%	
306	Environmental Stress in Animals	0%	0%	1%	
307	Animal Management Systems	60%	60%	1%	
311	Animal Diseases	15%	15%	1%	
315	Animal Welfare/Well-Being and Protection	0%	0%	90%	
	Total	100%	100%	100%	

V(C). Planned Program (Inputs)

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

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	37.0	3.5	27.0	0.0
Actual	36.0	3.0	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
686690	211296	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
2866529	211296	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
407091	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

This is an Extension-only program, as the research portion has been moved to Global Food Security and Hunger.

The Master Beef Producer Program was led by a team of University of Tennessee Extension specialists and agents, with the support and involvement of representatives of state agencies, businesses and organizations that have an interest in the state's cattle industry. Master Beef Producer programs were only taught by agents who completed the comprehensive training curriculum. Industry professionals, veterinarians, and other local industry leaders were included as a part of the teaching team.

2. Brief description of the target audience

Producers, veterinarians, and others associated with the animal industry.

Tennessee cattle producers are primarily cow-calf operators. All of the state's cow-calf operators compose the target audience for this planned program.

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	10000	15000	5000	0
Actual	129298	58500	12794	0

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

Patent Applications Submitted

Year: 2010

Plan: 1

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Plan	4	30	
Actual	1	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of exhibits displayed to promote awareness of and participation in this planned program.

Year	Target	Actual
2010	5	28

Output #2

Output Measure

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

Year	Target	Actual
2010	2500	17918

Output #3

Output Measure

- Development of a 'hand-held' diagnostic device for Johne's disease by merging our diagnostic method and microfluidic technology. (Eda)

Year	Target	Actual
2010	0	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Extension Economic Impact: The total economic impact of Extension animal systems programs. (The target is expressed in millions of dollars.)
2	Beef Production and Marketing: Number of beef producers who utilized improved sires, artificial insemination or other genetic improvement methods.
3	Adoption of reproduction-enhancing media additive for cattle embryo transfer, annual uses in Tennessee (Schrick).
4	Reduction in mastitis in Tennessee dairy cattle by genetic marker screening, percent reduction (Oliver).
5	Educational assistance was provided to beef producers resulting in increased Tennessee Department of Agriculture cost-share assistance for improved facilities, equipment and genetics.
6	Dairy producer involvement in the Tennessee Quality Milk Producer (TQMP) program (Oliver).
7	Beef Production and Marketing: Number of beef producers who improved marketing methods.
8	Beef Production and Marketing: Number of producers who improved forages for livestock by broadleaf weed control, planting clover, stockpiling fescue or planting warm-season grasses.
9	Beef Production and Marketing: The number of calves managed according to Beef Quality Assurance (BQA) guidelines.
10	Sales of multiple ovulation embryo transfer (MOET) technology for cattle embryo transfer, dollars (Schrick)
11	Small Ruminant

Outcome #1

1. Outcome Measures

Extension Economic Impact: The total economic impact of Extension animal systems programs. (The target is expressed in millions of dollars.)

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	249000000	82138004

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Livestock sales in Tennessee total over \$1 billion annually. Tennessee has 3.5 million acres of forages and 2.1 million head of beef cattle. Producers need education in maintaining or improving production efficiency, marketing, product quality and food safety.

What has been done

UT Extension conducted 1587 group meetings, including field days and Master Beef Producer programs, reaching 38,503 contacts. Extension personnel made more than 6,000 farm visits reaching 14,453 contacts to teach best practices and offer technical expertise on animal production issues.

Results

The economic impact of the Extension beef program in FY 2010 was estimated at \$82 million based on questionnaires and observation of producer adoption. The economic estimate included five practices: managing calves according to beef quality assurance guidelines, covering round hay bales, using bulls with greater genetic potential, using hay feeding rings, and improved marketing (such as the use of alliances).

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #2

1. Outcome Measures

Beef Production and Marketing: Number of beef producers who utilized improved sires, artificial insemination or other genetic improvement methods.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	350	4527

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
303	Genetic Improvement of Animals

Outcome #3

1. Outcome Measures

Adoption of reproduction-enhancing media additive for cattle embryo transfer, annual uses in Tennessee (Schrick).

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Reduction in mastitis in Tennessee dairy cattle by genetic marker screening, percent reduction (Oliver).

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Educational assistance was provided to beef producers resulting in increased Tennessee Department of Agriculture cost-share assistance for improved facilities, equipment and genetics.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	7000000	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #6

1. Outcome Measures

Dairy producer involvement in the Tennessee Quality Milk Producer (TQMP) program (Oliver).

Not Reporting on this Outcome Measure

Outcome #7

1. Outcome Measures

Beef Production and Marketing: Number of beef producers who improved marketing methods.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	400	4475

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

Outcome #8

1. Outcome Measures

Beef Production and Marketing: Number of producers who improved forages for livestock by broadleaf weed control, planting clover, stockpiling fescue or planting warm-season grasses.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	500	6286

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
302	Nutrient Utilization in Animals
307	Animal Management Systems

Outcome #9

1. Outcome Measures

Beef Production and Marketing: The number of calves managed according to Beef Quality Assurance (BQA) guidelines.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1200	206779

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Beef Quality Assurance (BQA) continues to be a need for Tennessee beef producers.

What has been done

Extension agents and specialists made special efforts to certify beef producers in BQA through group and individual teaching. Newspaper articles and radio programs were used to promote BQA.

Results

In Tennessee, 8734 beef producers sold 206,779 calves managed according to BQA guidelines to increase returns by \$6,616,928 in FY 2010.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems
315	Animal Welfare/Well-Being and Protection

Outcome #10

1. Outcome Measures

Sales of multiple ovulation embryo transfer (MOET) technology for cattle embryo transfer, dollars (Schrack)

Not Reporting on this Outcome Measure

Outcome #11

1. Outcome Measures

Small Ruminant

2. Associated Institution Types

- 1890 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Goats afford the small limited resource landowner(s) an alternative enterprise. The goat provides food security, high quality protein (for human consumption), biological land enhancement and many "value-added" products to increase revenue generated on a holistically sustainable rural farm. With the decrease in planted tobacco acreage and income from this traditional crop, the production of goats becomes a natural alternative. Tennessee continues to rank second in meat goats in the U.S. The total number of meat goat in Tennessee in 2010 was slightly lower than 2009 (133,000 head) due to a damaging spring flood and severe drought during the summer/fall. Meat goat numbers have been significantly increasing within the U.S. since the early 1990's; but goat meat consumption has surpassed available supply, based on ethnic group statistics. The importation of goat meat (30 pound carcass equivalent) surpassed export in 1994. This past year, importation has decreased due to fluctuating weather circumstances in export countries. There is no longer an export value for goat meat; the import value has tripled and is still on the rise. Therefore, from expressed circumstances, goat meat production becomes a viable alternative agricultural crop.

What has been done

The Master Meat Goat Producer program was designed to specifically address the above circumstance. This program is for agricultural extension agents, 4-H agriculture agents, and producers along with Future Farmer of America instructors and 4-H leaders. Once these individuals have been through the In-Service trainings, they can then return to their respective counties and share the knowledge with producers in their areas. The Small Ruminant College is a two-day annual event focusing on specific challenges in the industry that year. Along with inside lectures, outside hands-on demonstrations are held with the attendees participating. Proceedings are provided for continuing education. The Tennessee Browsing Academy is a three-day mixture of hands-on and lecture out in the field with the goats. This program targets invasive weed abatement, cut-over timberlands, stream bank restoration, and maintaining the

edges of crop lands.

Results

Attendees become intensely aware of livestock behavior, interactions with the environment and an appreciation for goat meat production to increase sales. They become more confident and willing to try new approaches and adaptations to old adages. As the clients take this learned skill set of information home and implement these practices on their own farms, they qualify to receive matching funds from the TN Agricultural Enhancement Program. To date, more than 700 families have been through the Master Meat Goat Producer Program, 35 families (2010) through the Small Ruminant College and 24 individuals (2010) participated in the Tennessee Browsing Academy.

4. Associated Knowledge Areas

KA Code	Knowledge Area
307	Animal Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

{No Data Entered}

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

1. Evaluation Studies Planned

- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Other (Ongoing)

Evaluation Results

The Extension Evaluation Specialist provided leadership for a statewide economic assessment of Extension beef programs. This assessment involved every County Extension Agent working in beef production in the state.

The economic impact of the Extension beef program in FY 2010 was estimated at \$82 million based on questionnaires and observation of producer adoption. The economic estimate included five practices: managing calves according to beef quality assurance guidelines, covering round hay bales, using bulls with greater genetic potential, using hay feeding rings, and improved marketing (such as the use of alliances).

Key Items of Evaluation

The economic assessment used in this program was developed over a three-year period. The assessment has been used for the past two years, and it has been well-received by various state-level stakeholders. High-quality and valid evaluation studies require much time and effort, and in the case of production agriculture, these assessments often require a local Extension Agent to keep detailed records and make extensive observations.