

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Livestock Production

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
301	Reproductive Performance of Animals	10%	20%	10%	20%
302	Nutrient Utilization in Animals	25%	20%	15%	0%
303	Genetic Improvement of Animals	5%	0%	5%	0%
304	Animal Genome	0%	0%	10%	20%
305	Animal Physiological Processes	0%	0%	0%	30%
306	Environmental Stress in Animals	5%	0%	5%	0%
307	Animal Management Systems	20%	20%	20%	20%
308	Improved Animal Products (Before Harvest)	20%	0%	20%	0%
311	Animal Diseases	0%	20%	0%	0%
312	External Parasites and Pests of Animals	0%	10%	0%	0%
313	Internal Parasites in Animals	5%	10%	5%	10%
315	Animal Welfare/Well-Being and Protection	10%	0%	10%	0%
	Total	100%	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	45.0	7.0	20.0	12.0
Actual Paid	37.4	3.5	29.8	9.0
Actual Volunteer	0.0	20.0	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
498879	246126	1552050	1494958
1862 Matching	1890 Matching	1862 Matching	1890 Matching
498879	150408	2505347	798801
1862 All Other	1890 All Other	1862 All Other	1890 All Other
4130495	0	3722763	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

AgriLife Extension and AgriLife Research

Research as well as group and individual education was ongoing across the 7 key subject matter/commodity areas. Methods of education included public meetings, individual support, printed and video/DVD materials and web-based materials. Collaboration with breed associations, commodity groups and corporations targeted research and educational needs of a diverse livestock industry across the state, involving both youth and adults.

Cooperative Extension Program

Cooperative Extension
 Conducted educational programs
 Conducted subject matter workshops/field days/ tours
 Provided one-on-one technical assistance/consultations
 Conducted training programs
 Assisted clients with development of farm plans
 Held on-farm demonstrations

Cooperative Agricultural Research Center

Applied and basic scientific research goals are as follows:

1. Determine the efficiency of farm animal production systems through a combination of best management practices and genetic enhancement.
 - a. Analyze the usefulness of various forage based production systems and management practices for the Texas Gulf Coast. Maximize livestock productivity on small acreage using forage based nutrient systems for livestock production.
2. Develop methods to improve reproductive efficiency of farm animals and improved conditions for growth and well-being.
 - a. Define endocrine and paracrine mechanisms which regulate early embryonic growth, uterine receptivity and support conceptus growth, endometrial attachment and placentation.
 - b. Investigate factors involved in regulation of male fertility levels.
 - c. Utilize functional genomic approaches to understand the physiological mechanisms that influence reproduction, growth and efficiency of food producing animals.
 - d. Identify molecular markers for desirable traits, including milk production, diseases and stress resistance.

2. Brief description of the target audience

AgriLife Extension and AgriLife Research

The target audience is composed of beef cattle, horse, dairy, sheep, goat and swine producers/owners/users, commodity group leadership, associations and registries, and youth enrolled in 4-H and FFA livestock projects.

Cooperative Extension Program

Small farmers; limited resource farmers; family farmers and socially disadvantaged farmers.

Cooperative Agricultural Research Center

While the University's service area extends throughout Texas and the world, the University's target service area includes the Texas Gulf Coast Region. This includes the surrounding counties, especially Waller County and includes the rapidly growing residential and commercial area known as the Northwest Houston Corridor as noted in the original Texas Plan. Therefore, problems associated with agricultural production systems, including those that exist at urban-agricultural interfaces and impact stakeholders will be addressed.

3. How was eXtension used?

The Texas AgriLife EDEN disaster management website is linked to the National EDEN website and the eXtension network. Animal Science faculty continues to update and develop educational materials dealing with management of livestock during and following catastrophic events such as wildfires, drought and floods.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	46257	866559	8734	0

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

Patent Applications Submitted

Year: 2014

Actual: 1

Patents listed

System and Method for Super-Intensive Shrimp Production Density Shrimp Production

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	0	417	417

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of group educational sessions conducted.

Year	Actual
2014	1550

Output #2

Output Measure

- # of research-related projects.

Year	Actual
2014	131

Output #3

Output Measure

- # of one-on-one technical assistance/consultations.

Year	Actual
2014	130

Output #4

Output Measure

- # of graduate/undergraduate students involved in research projects.

Year	Actual
2014	12

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	% of livestock owners/producers that adopt or plan to adopt best management practices to improve quality and profitability.
2	% of livestock owners/producers/commodity group representatives that report increased knowledge of best management practices to improve quality and profitability.
3	% of livestock owners/producers that report a savings in money or increased profit by best management practices adopted.

Outcome #1

1. Outcome Measures

% of livestock owners/producers that adopt or plan to adopt best management practices to improve quality and profitability.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	82

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Best management practices to ensure quality, profitability, productivity and optimal utility help clientele make changes to improve livestock, management, resources and time to increase income and improve profit opportunities

What has been done

Programs conducted include TAMU Beef Cattle Short Course, Texas Beef Quality Producer, Beef and Pork 101, Beef 706, Grassfed Beef Conference, Retail Beef Boot Camps, Rebuilding Texas Herds, Retail Beef Boot Camps, Pasture Management Workshops, Bull Selection, Low-Stress Livestock Handling, Stockmanship schools, Southwest Dairy Conference, Livestock management during drought, Mare/Foal Workshop, Farriers Conference. Youth programs included the 42nd Annual Summer Horsemanship Schools, Lamb/Goat Camps and Judging camps for Beef Cattle, Horses, Sheep and Goats. In addition to specialist driven programs listed above Animal Science Extension faculty support producer education through delivery of educational programs at 210 county programs

Results

From measures including beef/dairy cattle, sheep/goats, horses and meats, 59% to 100% reported intent to adopt of at least one best management practice. 56% to 94% expected to increase income or profitability by adoption of best management practices. 64% to 84% of respondents indicated they would implement changes to their livestock and resource

management practices as they rebuild their livestock inventories. 60% to 93% reported elimination of non-productive practices. 62% implemented financial plans, 76% hay analysis, 81% reported use of cost/lb of nutrient strategies for alternative feedstuffs and 92% use body condition scoring as a management tool.

4. Associated Knowledge Areas

KA Code	Knowledge Area
301	Reproductive Performance of Animals
302	Nutrient Utilization in Animals
303	Genetic Improvement of Animals
306	Environmental Stress in Animals
307	Animal Management Systems
308	Improved Animal Products (Before Harvest)
313	Internal Parasites in Animals
315	Animal Welfare/Well-Being and Protection

Outcome #2

1. Outcome Measures

% of livestock owners/producers/commodity group representatives that report increased knowledge of best management practices to improve quality and profitability.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	85

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

AgriLife Extension and Research:

Increased knowledge prompts adoption of best management practices to ensure quality,

profitability, productivity and utility of livestock, management, resources and time. Knowledge of best management prompts time savings, increased confidence in management decisions and problem solving for producer and youth involved in the livestock industry.

Cooperative Extension & Agricultural Research Center:

Limited resource livestock producers have historically demonstrated a lack of understanding of how to properly develop and implement a herd health management program. This lack of understanding is reflected, not just in the overall health of their animals, but also in how it impacts them economically.

What has been done

AgriLife Extension and Research:

Programs conducted include TAMU Beef Cattle Short Course, Texas Beef Quality Producer, Beef and Pork 101, Beef 706, Grassfed Beef Conference, Retail Beef Boot Camps, Rebuilding Texas Herds, Retail Beef Boot Camps, Pasture Management Workshops, Bull Selection, Low-Stress Livestock Handling, Stockmanship schools, Southwest Dairy Conference, Livestock management during drought, Mare/Foal Workshop, Farriers Conference. Youth programs included the 42nd Annual Summer Horsemanship Schools, Lamb/Goat Camps and Judging camps for Beef Cattle, Horses, Sheep and Goats. In addition to specialist driven programs listed above Animal Science Extension faculty support producer education through delivery of educational programs at 210 county programs.

Cooperative Extension & Agricultural Research Center :

Extension personal conducted educational programs that provided small producers with the knowledge needed to maintain their livestock in a sufficient and sustainable way. A number of topics were covered, including (but not limited to) herd health, vaccination protocols, and parasite management. Specialists and other university resource personnel assisted in conducting the programs.

Results

AgriLife Extension and Research:

72% to 100% reported improved decision making ability. 70% to 100% reported increased confidence in management ability. 93% indicated knowledge gains of 56% to 88% for livestock management following extreme drought and loss of forage production potential, cattle handling, food safety control, environmental management, financial management during drought, livestock evaluation and general livestock and ranch management.

Cooperative Extension & Agricultural Research Center:

Small producers learned and developed skills necessary to create and implement herd health programs. These programs helped them to improve the overall quality of their livestock, thus allowing them to be more profitable and sustainable in the future. Some program examples include:

CEP personal implemented a hands-on livestock castration workshop, with 100% satisfaction on surveys returned.

Specialist presented during program for small-scale producers, with 83-100% survey respondents expressing satisfaction with the program, and 100% anticipating positive economic impact from knowledge gained.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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Outcome #3

1. Outcome Measures

% of livestock owners/producers that report a savings in money or increased profit by best management practices adopted.

2. Associated Institution Types

- 1862 Extension
- 1890 Extension
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	64

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Animal management systems must go beyond striving to improve quality of life, quality of production and increased knowledge to achieve a level of sustainability. For production systems to be sustainable they must be profitable. To improve profitability income needs to increase and costs need to be lowered or controlled. A continued push was made through programming to encourage producers to look at enterprise diversification and adding stocking rate flexibility into their production systems.

What has been done

Economic benefit was measured from responses from participants in the TAM Beef Cattle Shortcourse, Small Landowner Conferences, Beef Quality Assurance programs, Rebuilding Texas Herds, Southwest Beef Symposium, Beef 706, Reproductive Management Shortcourse, Cattle Handling and Dairy Programs.

Results

55% to 100% of the participants in these programs indicated they would benefit economically through adoption of management practices outlined in these programs. Participants in the small landowner programs indicated an expected increase in income of \$13.50 per head. Participants in Quality Assurance programs indicated increased income from \$30 to \$100 per head. Of the Beef 706 participants 87% indicated they would benefit economically by an estimated \$44.00. Reproductive management practices on beef and dairy operations indicated returns of \$40 to \$85 per head. Economic impact across the livestock sector is projected to be between and \$1.6 and \$24 million from adoption of management practices.

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
- Public Policy changes
- Government Regulations
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

Livestock ownership, production and use in Texas continue to be influenced by natural disasters. 2014 followed three tough production years for livestock production. 2011 was the driest year on record and the second hottest year on record. 2012 saw only regional and periodic relief to the devastation of the 2011 production year. Recovery in 2013 was limited to non-existent across most of Texas with only the eastern third of the state seeing measureable improvement. 2014 lead to more mitigation of soil moisture concerns but the

Northern and Western areas of the state continue to lack adequate rainfall to result in collection of surface water to provide drinking water for livestock. Inadequate surface water continues to be the main limiting factor in recovery of the ruminant livestock production systems in Texas. Weather related challenges continue to alter program delivery and adoption of some management practices. Routine management of livestock has been influenced and significant need exists for education in emergency and alternative management plans. Production costs and incentives for livestock production, management, and use are influenced by economic changes. Input prices, agriculture valuation, and health care costs are all factors. Public policy changes and government regulations challenge educators to provide up-to-date, neutral information that helps livestock participants make decisions. Population shifts and use of available land for productive and meaningful livestock production bring opportunities and challenges to livestock owners/producers/users and the associations/corporations/groups that make up this diverse industry.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Outcome measures include pre-post knowledge assessment, adoption of best management practices and elimination of non-beneficial practices, and change in confidence/competence. Changes in time and money spent/saved/invested for livestock production were measured in selected areas.

Key Items of Evaluation