

V(A). Planned Program (Summary)

Program # 11

1. Name of the Planned Program

Animal Production Systems

2. Brief summary about Planned Program

AES will focus on fundamental and applied research in breeding, nutrition, physiology, behavior, integrated resource management systems, economics, health, and range/forage management. Extension outreach will span the breadth of the topics of research to assure that industry participants have practical knowledge in modern beef, dairy, and sheep production systems, biosecurity, economic and risk management, and response to policy and consumer changes.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

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	0%		10%	
302	Nutrient Utilization in Animals	0%		10%	
303	Genetic Improvement of Animals	0%		20%	
307	Animal Management Systems	0%		30%	
311	Animal Diseases	0%		10%	
315	Animal Welfare/Well-Being and Protection	0%		10%	
601	Economics of Agricultural Production and Farm Management	0%		10%	
	Total	0%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Animal agriculture is a major economic sector in the United States and the leading agricultural activity in Colorado. In 2006, live meat animal sales were valued at \$4.062 billion and the value of dairy production was \$327 million. Livestock and livestock products accounted for 72% of crop and livestock sales in Colorado. Remaining competitive requires that the industry produce with the most technically sophisticated systems available while considering environmental and animal welfare dimensions to

maintain confidence of the consuming public. Ruminant agriculture on range is the only significant agricultural enterprise which is ubiquitous in Colorado. In addition to novel and economic production practices, today's livestock producers must be knowledgeable of alternative supply chains to select a lucrative market, be aware of animal identification and trace-back requirements, understand the effects of emerging animal public health conditions, and understand the international and domestic trade environment and trends and how to respond with risk management strategies.

2. Scope of the Program

- In-State Research
- Multistate Research

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Research in beef production management systems and nutrition is conducted on owned facilities at the Agricultural Research, Development, and Education Center (ARDEC), Eastern Colorado Research Center, Southeastern Colorado Research Center, and the Rouse Ranch in Saratoga, Wyoming. An integrated "Beef Alliance" coordinates teaching, research, and outreach in beef across all facilities focused on value-added production systems. Strong relationships exist between animal scientists and agricultural management and market economists. ARDEC hosts seed stock herds for Angus and Hereford, as well as a ram test. The University has several significant assets, including the Western Center for Integrated Resource Management, the Center for Genetic Evaluation of Livestock, the congressionally sponsored National Beef Cattle Evaluation Consortium and strength in research and graduate programs in beef nutrition and breeding. Livestock industry outreach includes a team of campus specialists in livestock management systems, economics, trade, policy, manure management, meat science, alternative marketing chain participation, and animal identification system.

2. Ultimate goal(s) of this Program

- Develop improved animal production systems that are economical and environmentally sound including genetics and breeding, nutrition, and management components.
- Develop information and methods to improve reproductive efficiency including increasing pregnancy rate, decreasing embryonic mortality and decreasing prenatal mortality.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2013	0.0	0.0	5.0	0.0
2014	0.0	0.0	5.0	0.0
2015	0.0	0.0	5.0	0.0
2016	0.0	0.0	5.0	0.0
2017	0.0	0.0	5.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Workshops and educational classes for producers
- Demonstration field days to showcase the results
- Individual counseling on producers' specific problems
- Conduct basic and applied research on livestock, primarily beef, dairy, sheep, and horses

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> • Other 1 (Field Days) • Other 2 (Workshop) 	<ul style="list-style-type: none"> • Public Service Announcement • Newsletters • Web sites other than eXtension

3. Description of targeted audience

Individual agricultural producers, commodity groups, agri-business partners

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
 - Number of patents submitted
 - Number of peer reviewed publications
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Amount of grant dollars garnered to support animal research and outreach programs
- Number of workshops presented
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Economic impact of the change in behavior reported
2	Change in knowledge with respect to animal production systems and reproductive efficiency

Outcome # 1

1. Outcome Target

Economic impact of the change in behavior reported

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 303 - Genetic Improvement of Animals
- 307 - Animal Management Systems
- 311 - Animal Diseases
- 315 - Animal Welfare/Well-Being and Protection
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Research

Outcome # 2

1. Outcome Target

Change in knowledge with respect to animal production systems and reproductive efficiency

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 303 - Genetic Improvement of Animals
- 307 - Animal Management Systems
- 311 - Animal Diseases
- 315 - Animal Welfare/Well-Being and Protection
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Changes in international regulations for export and import of food animals and products affect production alternatives and economics of trade. Drought and weather extremes affect the availability of water, forage, and other factors of production that may contribute to the availability of food animals in the marketplace.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Regular pre-post evaluations are used. Formative evaluations are often used during programs to adjust focus and direction. Case studies are used to clearly demonstrate impact through the Integrated Resource Management graduate program.