

# Animal Production and Protection

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## V(A). Planned Program (Summary)

### 1. Name of the Planned Program

Animal Production and Protection

## 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	16%	16%	16%	16%
302	Nutrient Utilization in Animals	15%	15%	15%	15%
303	Genetic Improvement of Animals	16%	16%	16%	16%
305	Animal Physiological Processes	8%	8%	8%	8%
306	Environmental Stress in Animals	5%	5%	5%	5%
307	Animal Management Systems	23%	23%	23%	23%
311	Animal Diseases	8%	8%	8%	8%
312	External Parasites and Pests of Animals	3%	3%	3%	3%
313	Internal Parasites in Animals	3%	3%	3%	3%
315	Animal Welfare/Well-Being and Protection	3%	3%	3%	3%
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

## V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	4.5	0.3	3.0	0.8
<b>Actual</b>	11.8	1.0	2.3	1.6

### 2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c 1014918	1890 Extension 294445	Hatch 229236	Evans-Allen 166675
<b>1862 Matching</b> 1014918	<b>1890 Matching</b> 294445	<b>1862 Matching</b> 229236	<b>1890 Matching</b> 166675
<b>1862 All Other</b> 0	<b>1890 All Other</b> 0	<b>1862 All Other</b> 0	<b>1890 All Other</b> 0

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

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Workshops were held for clients. Tutorial was developed.

New treatments for the control bovine mastitis were developed.

Research was conducted to develop models and software that can be used to analyze data sets composed of beef cattle of differing breed composition. Multi-breed genetic values were provided on the animals contained in the data sets analyzed. The data sets principally came from purebred beef associations and large commercial operations.

Workshops, field trials and farm visits with groups of producers across Georgia regarding the improvement of reproductive management and milk production were held.

Dairy Business Analysis Project (DBAP) data was collected and analyzed.

A bull testing program and sale was conducted at two locations per year in Georgia. Approximately 350 bulls were tested each year. A heifer evaluation and reproductive development program and sale was conducted at two locations in Georgia each year. Approximately 400 heifers were evaluated each year. The Georgia Beef Challenge evaluated calves for feedlot performance and carcass evaluation in commercial feedlots.

Studies were conducted in the pig to examine intake regulation. These added to our understanding of the key regulatory points that can be applied in the industry to improve efficiency and reduce cost of production. Studies examining the efficiency of nitrogen and phosphorous utilization were conducted concurrently that have the potential to reduce the environmental impact of animal agriculture.

Improved techniques for reducing the negative effects of heat stress on production and reproduction will be disseminated to end users including nutritionist, bovine practitioners, dairy producers, county agents, and scientific peers through the publication of research reports, abstracts, and journal articles as well as presentations at dairy field days and conferences.

Seven consecutive Monday night workshops/classes conducted by State Specialists will allow producers to learn advanced beef management practices. These workshops/classes allow producers and agents to have one-on-one interactions with UGA scientists.

Through meetings, one-on-one consultations, publications, etc., we provided timely and pertinent information to agents, producers and the general public. In addition to information about flies, fleas, and other ectoparasites, we covered topics related to pests of livestock, poultry, and companion animals. Working with the media, we disseminated information on such topics as ticks, mosquitoes, bed bugs, chiggers, and venomous spiders. We collaborated with all the state's food animal associations, as well as the Georgia Pest Control Association, to provide their members the most up-to-date research-based information.

Collaborative efforts within the Department of Animal and Dairy Science, USDA/ARS, Russell Research Center, and College of Veterinary Medicine were established. Joint working groups from all involved agreed on a working plan and coordinated ongoing activities. Microbiological laboratories and veterinary diagnostic laboratories played a key role in the detection of resistant bacterial pathogens with regards to submission of clinical specimens for the historical culture and sensitivity testing. Results obtained from research studies were presented at scientific meetings and manuscripts were submitted for publication consideration in refereed journals.

Training the poultry industry on effective environmental management practices and educating the general public concerning the issues of nutrient management, nutrient balance, and sustainable water quality continue to be conducted. Two poultry companies were targeted this year for training of new growers on NMP efforts and plan development. To that end, three grower trainings were conducted. Poultry growers and allied industry continue to need training in order to come into compliance with the requirements of National Pollutant Discharge Elimination System (NPDES) permits.

New statistical procedures focusing on predicting performance or commercial animals with greater weight on non-production traits were developed.

Research will continue that compares cow-calf production on different bahiagrass and bermudagrass /creep grazing experiments. Evaluation of new forages including Coastcross II for grazing and hay quality; and, pigeon peas for grazing and for grain production for cattle feeding will continue. By-product feeds will be evaluated for nutritional and economic value in beef production systems. Strategies were employed to evaluate improved beef meat quality through feeding different additives and grains, and effects on human nutrition (Lowering fat content, decreasing cancer-causing agents, increasing CLA in fat.)

Four group training sessions were held. Information materials relative to parasites and NAIS were developed and

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distributed. On-farm and research station studies with sericea lespedeza and hair sheep genetics were conducted. Over 500 responses were made to technical inquiries via e-mail and telephone.

New scientific information was made available to scientific peers through the publication of original research articles in scientific journals. More applied knowledge was disseminated to the audience at large (producers, practicing veterinarians, extension personnel) by publishing results in journal articles or departmental research reports and by coordinating presentations with extension personnel.

Phenotypic records on traits correlated to the responses of interest and genetic test information of already identified mutations was used. Several simulation scenarios was implemented and tested. Accuracies of breeding values predictions and the expected genetic process was used as evaluation criteria.

A "Master Equine Specialist" program was developed.

Lactating goats were fed either alfalfa- or sericea lespedeza-based concentrate diets. Milk yield and composition, and fatty acid composition were determined. Growing goats were also fed total mixed diets (similar protein and energy) containing either sericea or bermudagrass hay. Weight gain was determined.

## 2. Brief description of the target audience

Target Audience includes: industry professionals, county agents, scientific peers, Agribusiness personnel, Veterinarians, Financial officers, consumers, animal agricultural producers (dairymen, poultry producers, livestock producers, etc.), neighbors living around animal agricultural environments, horse, dog, cat or other pet owners. Also includes statewide audience of Extension educators and public interested in or engaged in goat production, sheep production, or multi-species grazing, and traditionally underserved clients engaged in or interested in livestock enterprises in general.

## V(E). Planned Program (Outputs)

### 1. Standard output measures

#### Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	2500	20000	400	1600
2008	2940	22390	1080	1980

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

#### Patent Applications Submitted

Year	Target
Plan:	0
2008:	0

#### Patents listed

### 3. Publications (Standard General Output Measure)

#### Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	0	
2008	0	0	8

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

Number of significant publications including referred journal articles, bulletin and extension publications.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2008	12	58

**Output #2**

**Output Measure**

Number of educational contact hours generated from formal educational programs or presentations for county extension agents.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2008	525	305

**Output #3**

**Output Measure**

Number of educational contact hours generated from formal educational programs or presentations for clientele.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2008	1500	1123

**V(G). State Defined Outcomes**

O No.	Outcome Name
1	Number of additional direct extension contacts made by county faculty not receiving federal funds, staff or volunteers as a direct result of the work of faculty receiving federal funds within this planned program.
2	Number of Master Cattlemen certifications granted through this planned program.
3	Increase in the farm gate value of livestock production in Georgia. Reported in millions of dollars.
4	Number of invited presentations by faculty as a direct result of the success of this program.
5	Percentage of program participants reporting increased knowledge after program participation.
6	Percentage of program participants responding to follow-up survey that indicate changing at least one production practice as a result of this program.
7	Sericea lespedeza to replace alfalfa

**Outcome #1**

**1. Outcome Measures**

*Not reporting on this Outcome for this Annual Report*

**2. Associated Institution Types**

**3a. Outcome Type:**

**3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
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**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
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**V(H). Planned Program (External Factors)**

**External factors which affected outcomes**

Natural Disasters (drought, weather extremes, etc.)

Economy

Appropriations changes

Public Policy changes

Government Regulations

Competing Public priorities

Competing Programmatic Challenges

Populations changes (immigration, new cultural groupings, etc.)

## Brief Explanation

Wet and humid weather conditions favor the growth of environmental mastitis-causing bacteria, which increases the need for further mastitis control. A downward plunge in economy may prohibit the costs associated with antimicrobial therapy. Laws regulating the use of antimicrobials in food-producing animals may prohibit use of certain methods of mastitis control.

The adoption of the multi-breed evaluation methodology will depend on the cooperation among breed associations in terms of sharing their data bases and providing funds for research and development.

Drought, high feed prices and marketing situations from milk diversions and pooling.

Willingness of dairy producers to participate in the sharing of data.

Drought conditions can cause reductions in the number of cattle and thus decrease the demand for bulls and replacement females. A decrease in cattle prices or the overall economy would have the same effect.

Changes in economy or regulation may alter the potential use of some of the technologies investigated.

If the price drops substantially, producers may be less willing to focus on beef production and allocate their priorities and time towards other commodities.

Personnel changes and availability of resources influenced and served as alternative explanations for outcomes.

Price of commercial fertilizer will promote the use of organic fertilizers in areas of crop production outside of the poultry producing region.

Forage production for hay and grazing depends on weather conditions--drought could diminish expected productivity of new and experimental forages, affect stands, ultimately affect livestock production and profitability. Reduced public funding for fundamental forage and livestock production research could depress initiative to conduct needed high-quality research. Competing programs may force abandonment of on-going research programs.

Public policy on biofuel and impact on land use, food supply, and feed supply. Government regulations on meat inspection. General down-turn in economy meant less money for new enterprises. Success rate of grant applications because more competition for limited funds. Increase in target population brought higher demand.

Natural disasters cause economic hardship. This limits funds available for federal funding of research. Changes in policy or priorities may shift federal funds away from this area of research. Immerging issues such as avian influenza may reduce federal funds available for this area of research or force the closure of the USDA Animal Physiology research unit with which we collaborate.

Drought did not allow the establishment of the pastures area needed. But the experiments were switched around to conduct the lactation studies in confinement in 2007.

Not all external factors that were encountered were expected.

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

### 1. Evaluation Studies Planned

After Only (post program)

Retrospective (post program)

Before-After (before and after program)

During (during program)

Time series (multiple points before and after program)

Case Study

Comparisons between program participants (individuals, group, organizations) and non-participants

Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.

Comparison between locales where the program operates and sites without program intervention

## Evaluation Results

Contacts, DHIA data, breeding records and treatment information, surveys and questionnaires. Data from breeding and pregnancy treatments will be maintained, as well as blood and milk samples for analysis. Production records will be monitored before and after trainings.

Retrospective: After program is shown to be successful under experimental research conditions and results disseminated to end users, determine to what extent producers are utilizing the new technology. Comparisons between Program Participants: Perform a field trial using dairymen who employ the new technology vs those who do not and determine if the new technology is successful. Sampling: Of milk sample from cases of mastitis before and after treatment with experimental product. Case Study: Determine effectiveness of product using individual cases of mastitis in cooperator herds. Observation: Of individual cows which receive the new product for any effects on animal health. Tests: Performed in laboratory to determine bacterial species of infecting bacteria and for determination of somatic cells counts as a measure of inflammation.

After only: After multi-breed genetic evaluation methodology has been fully tested and made available, we will determine how many breed associations adopt it and how many producers are impacted by the new technology. Observation: we will be able to count how many breed associations and producers adopt the new model, and consequently how many cattle are affected by the new technology.

Information being gathered for publication.

No case studies were completed. One set of "before" data were collected to measure impact following intervention of deworming protocol.

Data analysis & publications.

Gather input from producers concerning problems encountered before research is conducted, then demonstrate results in university tours/demonstrations/presentations/on-farm demonstrations. Then, after producers apply all or part of programs or initiate stands of new forages, ask for producer and county extension agent reporting of results. Provide input gathering meetings and opportunities for producers to reveal their results with new forages or management programs. Forage and hay samples could be gathered from demonstration sites and farmer fields, analyzed for quality to verify & compare with test results. Discussion with producers relative to their evaluation of forages is critical to acceptance and adaptation of new forages and management practices. Observation of on-site fields, hays, management would provide insight into how well producers are doing with new forages or management.

Data show that feeding 12% soybean oil compared to 6% decreased the proportion of milk saturated fatty acids and increased the proportions of monounsaturated fat and linoleic acid without affecting. Milk yield, protein, lactose and fat contents were not affected.

After completion of the project, evaluation will be conducted based on the adoption of the proposed procedure by breeding associations. The number and relevance of the breed associations to adopt the proposed procedure will allow us to evaluate the impact.

An evaluation is collected after the completion of the final session. This will help me to determine how the next program can be improved. One year after the program, a post-meeting survey is mailed to the participants that completed the program and assesses any changes they may have made and the overall financial impacts as a result of the program. An evaluation is collected after the completion of the final session. This will help me to determine how the next program can be improved. One year after the program, a post-meeting survey is mailed to the participants that completed the program and assesses any changes they may have made and the overall financial impacts as a result of the program.

Submission rate of poultry litter samples to the lab for analysis to aid in NMP decisions.

The program is evaluated annually as part of a multi-state research project.

During: Each year the program will be evaluated to determine if any new testing procedures should be implemented or educational materials developed to maintain the most current information for producers to use when determining the value of cattle. Sampling: Animals in the evaluation programs will be subjected to the following measurements: weight gain, reproductive tract traits, pregnancy status, frame size, and carcass traits utilizing both ultrasound and post-harvest carcass measurements. Observation: Animals will be evaluated for disposition, coat color, and structural abnormalities.

Industry contacts, producers, county agents, and scientific peers, data collection, group activities, meetings, on site visits, publications, reports -- data was gathered from each farm and summarized.

A pre-test will be given to program participants and a post test after the participants have gone through the entire program. In addition an evaluation form will be developed with the intent to measure knowledge learned as well as projected environmental and economic impact. Written tests and evaluations will be given.

## Key Items of Evaluation