ANNUAL REPORT OF ACOMPLISHMENTS AND RESULTS

COOPERATIVE EXTENSION AND RESEARCH

Langston University

Reporting Period: October 1, 2001 – September 30, 2002

Certification:

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A. Planned Programs

National Goal 1

An agricultural system that is highly competitive in the global economy. Through research and education, empower the agricultural system with knowledge that will improve the competitiveness in domestic production, processing, and marketing.

Overview

Langston University Research and Extension continue to carry out programs/projects designed to make our clientele highly competitive in a global economy. Research personnel are addressing nutritional needs of goats. Knowledge regarding nutritional needs of goats lags far behind the knowledge of cattle and sheep nutrition. Nutritional needs of goats impact in other areas such as reproduction, breed or biological type, internal parasitism, growth rate and overall management. Results from this research will help goat producers to increase the level and efficiency of their goat herds' productivity.

A very important factor in meat goat production is the growth rate efficiency of kids. Langston University Cooperative Extension personnel have developed a meat buck performance test to determine growth rate efficiency in goat kids. The test allows the identification of genetically superior meat goat lines. Use of genetically superior meat goat lines has helped some Oklahoma producers to become more competitive in meat goat production.

An aquaculture project is examining alternative production methods, species and markets for fish farmers. In Oklahoma, over 80% of reported aquaculture income is from channel catfish. Additional alternative markets are being examined to help boost channel catfish sales.

Total FY 2002 Expenditures and Full-time Equivalents (FTE) for Reported Projects

Smith-Lever: $38,000 FTE: 0.60

Evans-Allen: $1,171,256 FTE: 14.8

Key Theme – Animal Production Efficiency (Research)

a. Knowledge regarding goat production lags behind that for other ruminant species such as cattle and sheep. It is with this premise in mind that the general objective of this project is to study goat nutrient requirements, management practices and production systems in order to increase the level of production efficiency in goats.

b. **Impact** – Increasing numbers of Oklahoma farmers have added goat to their production systems. The unique feeding habit of goats has been a major reason for their inclusion into farming systems. This project is beginning to provide viable information that will assist producers in their goat management practices. Projected imput will include higher levels of efficiency in goat production and greater profits.

c. **Source of Federal Funds**: Evans-Allen

d. **Scope of Impact** – Oklahoma and United States

Key Theme – Aquaculture (Extension)

a. Channel catfish is the primary aquaculture crop in the United States. Approximately 600 million pounds of channel catfish were processed nationwide in 2001. However, most small catfish farmers can not afford to sell their catfish to a processor as the proverbial middleman. Producer income via processors is at its lowest level in a decade. Farmers must reduce production costs in order to sell their fish at a profit. Alternative markets or marketing methods need to be identified and used to increase sales of channel catfish.

b. **Impact** – Aquaculture personnel at Langston University have demonstrated that direct sales of unprocessed channel catfish to the public can be quite profitable for fish producers. Growing and selling alternative fish species such as buffalo, drum and carps to the public also have great potential for profit.

c. **Source of Federal Funds**: Smith-Lever

d. **Scope of Impact** – Oklahoma and Southern United States.

Key Theme – Animal Production Efficiency (Extension)

a. A very important factor in meat goat production is the growth rate efficiency of goat kids. Objective performance records are needed when making sound genetic selections to improve average daily gain and/or feed efficiency in goat herds. In order to compare animals from different ranches or environments, a central performance meat buck testing site was developed at Langston University.

b. **Impact** – over a six-year period in which these performance tests have been conducted, meat goat producers have been able to purchase performance – tested bucks via a public auction. Some producers have improved the genetics of their meat goat herds resulting in higher profits during 2002.

c. **Source of Federal Funds**: Smith-Lever

d. **Scope of Impact** – Oklahoma and United States

National Goal 4

Greater harmony between agriculture and the environment. Enhance the quality of the environment through better understanding of and building on agriculture's and forestry's complex links with soil, water, air, and biotic resources.

Overview

Control of fish parasites is hampered by lack of approved therapeutants and insufficient information regarding biological control of intermediate hosts for parasites with complex life cycles. Copper sulfate applications, or stocking exotic black carp in catfish ponds are two methods used to control snail hosts of digenetic trematodes. Digenetic trematodes can cause fish flesh to be unsalable because of cosmetic damage, and some exotic trematodes cause significant (up to 100%) mortality of infected channel catfish. Copper sulfate may kill catfish if applied improperly, and black carp may soon be declared an injurious species and banned from use in the United States.

Total FY 2002 Expenditures and Full-time Equivalents (FTE) for Reported Projects

Smith-Lever: $30,000 FTE: 0.50

Key Theme – Sustainable Agriculture (Extension)

a. Langston University researchers investigated the feasibility of using native fish species as a substitute for copper sulfate application, or use of an exotic fish species to control snails in catfish culture ponds. Langston University has successfully cultured freshwater drum for over 5 years. Several sizes of drum fingerlings were stocked at 125/ha in University Research and Demonstration fish culture ponds, and at a commercial catfish farm.

b. **Impact** – Use of drum can eliminate the cost and environmental concern of repeated applications of copper sulfate in catfish ponds, and replace exotic black carp, which may decimate native mollusk populations if the carp escape from culture facilities. The commercial farmer who participated in this study is now growing drum to control snails, and for commercial sale. Growing drum has been a win-win situation by providing snail control and increased income from sales.

c. Source of Federal Funds: Smith-Lever

d. Scope of Impact - Oklahoma and the United States

National Goal 5

Enhanced economic opportunity and quality of life for Americans. Empower people and communities, through research-based information and education, to address economic and social challenges facing our youth, families, and communities.

Overview

Langston University Cooperative Extension personnel are implementing programs to enhance economic opportunities and quality of life for Americans. A quality education is perhaps the greatest avenue for enhancing future economic opportunities for youth. One of the most glaring obstacles to many youth becoming high achievers in school is poor reading skills. The Cooperative Extension 4-H reading program is achieving success in enhancing youth participants reading skills. Other programs are also enhancing youth's mathematic skills and appreciation of the arts.

The economic opportunities available through owning one's own business are being stressed by Langston University's youth entrepreneurship program. This program is tailored for youth and teaches the principles of basic business risks and money management from an entrepreneurial perspective.

Total FY 2002 Expenditures and Full-Time Equivalents (FTE for Reported Projects

Smith Lever: $43,362 FTE: 1.50

Key Theme – Literacy (Extension)

a. The Langston University Cooperative Extension Literacy In Action 4-H Summer Reading Program conducted a six-week, four hours per day; Reading Camp for students in grades one through five. The Reading Camp was held at Coyle School, (Coyle, Oklahoma). The Literacy in Action Program was designed to help youth enhance and/or maintain their reading skills during their summer vacation.

Research shows that reading and writing, as little as thirty minutes a day, can help students become more successful in improving their academic skills and abilities. Reading outside school can maintain, and in most cases, increase levels of reading growth reached in the classroom. Sixty-eight students participated in rotational Reading Enrichment Centers including *Reading Games, Recreational Reading, Competitive Reading, Creative Writing and Literary Growth*.

b. **Impact** – Students who participated in the reading camp during the summer were better prepared to manage the requirements of academic achievement during the beginning of the 2002 school year. Parents and teachers reported that the program helped their children/students to develop a greater interest in recreational reading, become more cooperative in class and handle conflicts better.

c. **Source of Federal Funds**: Smith-Lever

d. **Scope of Impact** – Central Oklahoma

Key Theme – Youth Development/4-H (Extension)

a. The value of age appropriate after-school and summer educational programs can not be overestimated. The Langston University Cooperative Extension Program's 4-H Youth Development and AmeriCorps Partner And Learner (PAL) Programs formed informal partnerships and collaborations with selected state schools and organizations. Through those collaborations, educational activities were provided during the summer of 2002 in such areas as academic tutoring, art, nutrition, recreation, and health and safety education.

b. Impact – The collaborative partnerships increased the resources that would not have otherwise been available to several underserved Oklahoma communities. Financial and in-kind resources provided transportation to the activity sites, breakfast, lunch and afternoon snacks. Resources were also available for art sessions under the direction of professional artists, character education and asset-building development. The collaborative efforts resulted in providing more than eighty-two children a safe, caring environment and an avenue for using their discretionary summer time productively.

c. **Source of Federal Funds**: Smith-Lever

d. **Scope of Impact** – Central Oklahoma

Key Theme – Youth Development/4-H (Extension)

a. The Langston University Cooperative Extension Office in Northeastern Oklahoma (Tahlequah) works in counties with Native American populations ranging from 8% to 42% and poverty levels from 14% to 26%. School enrichment programs have been conducted with public schools as well as home schooled audiences in Northeast Oklahoma. One school enrichment program of special interest is the youth entrepreneurship program (Mini Society).

The Mini Society Entrepreneurship program teaches youth and teens life skills that will improve their understanding and wise use of money. Participants learn basic money management and consumer skills, improve their problem solving skills and experience first hand the risks and responsibilities of being an entrepreneur. Such skills as check writing, balancing a checking account and applying for and using credit wisely will positively prepare participants for the real world of business.

b. Pre-and post-tests were administered during the entrepreneurship program. Test scores indicated that program participants increased their knowledge of entrepreneurship concepts, as well as, their consumer skills. Teachers and parents of participants have responded positively to the program.

c. **Source of Federal Funds**: Smith-Lever

d. **Scope of Impact** – Northeast Oklahoma

B. Stakeholder Input Process

Projects, programs and priorities of Cooperative Extension and Research at Langston University are strongly impacted by stakeholder input. Input from our stakeholders is an ongoing process. That process includes the following methods:

- Input from advisory boards
- Input during and following Research & Extension Field Days
- Stakeholder surveys

C. Program Review Process

There have not been any significant changes in the program review process since submission of the 5-year Plan of Work (1999-2004).

D. Evaluation of the Success of Multi and Joint Activities.

Multi and Joint activities include the following:

<u>Dairy Herd Improvement Association Laboratory</u>

A national Dairy Herd Improvement Association (DHIA) Laboratory has been in existence for a number of years. Research has shown that when the laboratory instruments are calibrated with a cow milk standard and then goat milk is tested, there is a 29% increase in somatic cells, a .27% decrease in protein and a .04% decrease in butterfat from the actual values. The records produced by the DHI labs across the country are used to identify high producing does. These records are also useful for the exportation of these does to foreign countries. In the past,

incorrect records were costing goat producers to lose money on the resale value of their does and offspring. Langston University established a certified DHI laboratory that calibrates the instruments using a goat milk standard. We have also worked in cooperation with Texas A&M University to write a program that utilizes goat language. Goat producers are now able to get records for there animals that reflect accurate information with the correct language. These records not only reflect higher fat and protein values for a doe, but also are easier to understand when dealing with importers from foreign countries. Currently, we are serving a 27 state area that includes a majority of the eastern states.