AMERICAN INSTITUTE FOR GOAT RESEARCH
LANGSTON UNIVERSITY
E (Kika) de la Garza

Goat Newsletter

Cooperative Extension Program
Langston University

The Newsletter of the E (Kika) de la Garza American Institute for Goat Research *Winter 2010*

From the Director's Desk

The end of the year is a time for us to relax a little. It is a time to reflect upon the year's activities and to plan for next year. We strive to improve each and every endeavour of the institute but we can only do that with valuable input from our stakeholders. That is why I am constantly seeking your input; whenever I see you at our annual Goat Field Day, internal parasite workshops, research meetings, and at any other venue when our paths may cross. We are here to serve you, the goat producer.

As I reflect upon 2010, some of the activities that come to mind are the aforementioned Goat Field Day, the national Animal Science meetings in Denver, the international goat meetings in Brazil, our developmental work in Ethiopia, and all of the ongoing research projects.

Goat Field Day is always a major event for us and we enjoy preparing for it. It is a challenge to pick a new theme that is attractive to a wide audience. Ever since its inception 25 years ago, the objective of the field day has been to disseminate timely and valuable information to goat producers. Our audience has changed over the years but our commitment to the producers never has. I remember when I first arrived at Langston University many years ago, a primary emphasis was on fiber production. We still have Angora and cashmere-bearing goats but our clientele has shrunk incredibly. I remember the days when there were 100,000 Angoras in Oklahoma and 2.7 million in Texas. In fact, we traveled to Texas to purchase our first Angoras. Today the Texas Department of Agriculture estimates that there are fewer than 300,000 Angoras in Texas and that number is dropping every year. Likewise, we have very low numbers of Angoras in Oklahoma but I digress. My point is that Goat Field Day is challenging because we must constantly scan the horizon for topics that interest goat producers. We simply can't take something off the shelf and re-use it year after year. If that were the case, we would still be having field days that highlight nutrition for fiber-bearing goats. If we did that, no one would come.

As I mentioned earlier, national and international meetings are part and parcel of who we are. I am very proud of Langston University's role as the premier goat research and extension center in the United States. That is not just my biased opinion but that of everyone that I meet. We didn't acquire this role by accident but through hard work and determination. University administrators through the ages have given us unqualified support for which I am very grateful. Having a supportive President and Dean is essential for any research program. However, I am most thankful for dedicated scientists and support staff. I am proud of the team that we have here and I consider it a privilege to work with them. They are brilliant, self-motivated, and seem to have boundless ener-

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gies. I have to say that Langston University has been well represented at national and international research meetings and on several occasions, our scientists have been invited to deliver special presentations.

Unlike our research and extension programs, the international program is totally funded by extramural grants. This program has to be self-sustaining; therefore, we are constantly seeking extramural funding to support this program. Our most recent international activity, the Ethiopia Sheep and Goat Productivity Improvement Program, supported by the United States Agency for International Development is progressing very well. We have a dedicated team of Ethiopian specialists in-country who work very closely with our scientists here at Langston University and also those at Prairie View A&M University. The imported Boer goats and Dorper sheep have acclimated very well and are producing many offspring. We have already disseminated both purebred and crossbred breeding stock to local farmers and we are awaiting those impacts. I feel that through this project we will have benefited those small subsistence farmers who are most at risk in this food insecure country. In fact, you can read later in this newsletter about a recent trip that Langston University and Prairie View A&M University scientists took in order to conduct artificial insemination in the nucleus herds.

I mentioned our Goat Field Day earlier and it is just one of our many extension activities, which include this newsletter, our website, workshops on internal parasites, hide tanning, artificial insemination, and cheesemaking, our Dairy Herd Improvement laboratory, publications, and many more activities; however, I feel that without our core research component we could not be effective extension agents. Our research program is the engine that drives the institute. Our goal is to develop and transfer enhanced goat production technologies at the local, national, and international levels through research, extension and international activities. I am proud of our research emphasis. I have seen goat extension or outreach programs that did not have a solid foundation of research at the same institution. In my opinion, those programs are not self-sufficient and must rely upon the research that is generated at other institutions. Our philosophy has always been and will always be that research is the foundation, that extension is the natural expansion of that foundation, and that international activities are a reward for research and extension that is done well. Well enough ramblings and thoughts about the year.

I hope that this past year has been a prosperous and joyful one for you, your family, and your goats. I look forward to a new and exciting year in 2011. Our first activity will be research grant writing and submission followed by the Goat Field Day. I hope to see each and every one of you then.

E. L. Holloway
Agricultural Research, Education and Extension Center

On September 16, 2010, the Agricultural Research, Extension, and Education Complex was officially renamed to the E. L. Holloway Agricultural Research, Education and Extension Center in honor of Dr. Ernest L. Holloway's commitment to agriculture.

Dr. Ernest L. Holloway was born in Boley, Oklahoma. Upon graduation from Boley High School, he continued his education at Langston University. He graduated from Langston University in 1952 with a bachelor's degree in Vocational Agriculture Education. He received his master's degree from Oklahoma State University in 1955 in Science Education, and a doctorate from the University of Oklahoma in 1970 in Higher Education Administration.

In 1952, Dr. Holloway began his career in education as a science teacher and later principal at Boley High School. In 1963 he accepted employment at Langston University. During his tenure at Langston, he served as Assistant Professor of Biology, Assistant Registrar, Registrar, Dean for Student Affairs, Professor of Education, Vice President for Administration, Acting President, and Interim President. He was elected President of Langston University in 1979 and retired in 2004 after 25 years of service as president.

Dr. Holloway was instrumental in the founding of the American Institute for Goat Research at Langston University in 1984. In fact, he cut the ribbon to inaugurate the institution and has been an ardent support of the institute since its inception. At a recent induction ceremony for international scholars, Dr. Holloway stated that "the goat institute put Langston [University] on the map and I am proud of that." Thus, it is fitting that the institute is currently housed in the building that bears his name.

Dr. Holloway received numerous awards and recognitions during his service at Langston. He was inducted into the Oklahoma Afro-American Hall of Fame in 1987, the Oklahoma Educators Hall of Fame in 1996, the Oklahoma Higher Education Hall of Fame in 1999, and the Oklahoma State University Alumni Association's Hall of Fame in 2001.

Tanning Goat Hides Workshop

Dr. Merkel examines a tanned Angora hide.

Dr. Merkel explains fleshing to a National Guard member during a training in 2010.

Have you ever wondered how to tan a hide? On Saturday, March 12, 2011, a tanning hides workshop will be held at Langston University from 8:00 a.m. to 12 noon. The focus of the workshop will be tanning hair-on hides but the process of dehairing hides and making leather and buckskin will also be discussed. After discussing the stages of tanning from how to handle and store a raw hide to softening and finishing a tanned skin, participants will have hands-on practice with goat skins in several of the different tanning steps. Participants can practice fleshing, will apply tanning chemicals, and soften a goat skin prepared for the workshop. Various tanning methods will be discussed and examples of tanning kits and chemicals displayed. All of the tanning procedures presented and chemicals used are appropriate for home tanning with all of the work done by hand. While the tanning of goat hides will be demonstrated, the processes learned can be used on deer, coyote and other skins. Registration is limited to 10 participants.

A registration fee of $10 is charged. Refreshments will be provided.

Liquid tanning method.

All ages are invited to attend the workshop.

For more information regarding the tanning hides workshop, contact Dr. Roger Merkel at (405) 466-6134 or rmerkel@luresext.edu. A registration form is available online at http://www2.luresext.edu/goats/extension/tanning.htm.

Research Spotlight

Acclimatization - Egypt

Five Balady and five Shami (Damascus) intact male goats, approximately 1½ year of age, were individually housed and used to determine effects of ambient temperature (Ta), relative humidity (RH), and temperature–humidity index (THI) on energy expenditure (EE). Average mean, low, and high values in 2-wk periods throughout the year were 73, 59, and 83 °F for Ta and 61.0, 49.6, and 68.5% for RH, respectively. Animals were fed alfalfa hay to meet the maintenance energy requirement. Because body weight was relatively constant throughout the experiment, EE was considered equal to metabolizable energy (ME) intake. In January, April, July, and October, the day of measuring heart rate (HR) occurred within a 7-day period when bucks were housed in metabolism crates for total collection of feces and urine. Individual EE to HR ratio was estimated at those times and used to predict EE throughout the year based on HR. EE was greater for Shami than for Balady goats in January, July, and October. EE: HR was greatest in April and greater for Shami vs. Balady. For monthly measures, rectal temperature, blood hemoglobin oxygen saturation, and HR were similar between breeds. HR differed among months, with means ranging from 57.0 to 77.6 bpm. No climate measure in the preceding 2 or 4 wk was correlated with EE or EEdiff. However, when correlations were conducted separately for each genotype, some relationships for Balady goats were significant while those for Shami goats were nonsignificant. In conclusion, EE of Balady goats appears sensitive to climate conditions, whereas that of Shami goats is not or at least is relatively less impacted. With hot conditions, Balady goats have an advantage in a decreased ME requirement for maintenance and with low Ta, Balady goats have an increased requirement.

A. Helal, K.M. Youssef, H.M. El-Shaer, T.A. Gipson, A.L. Goetsch and A.R. Askar. 2010. Effects of acclimatization on energy expenditure by different goat genotypes. Livestock Science 127:67-75 . [supported by the United State–Egypt Joint Science and Technology Fund Program, Under Project Number BIO11-001-005 (The Grazing Activity Energy Cost of Goats).]

Acclimatization - USA

Eight Spanish and eight Boer yearling doelings were used to assess relationships between energy expenditure (EE) and ambient temperature (Ta), relative humidity (RH), and temperature–humidity index (THI). Four doelings of each genotype were housed in two 18′ × 10′ pens of an enclosed facility with a concrete floor without cooling and with heat provided only to prevent damage to waterers and water lines from freezing. EE was determined over 2-day periods 13 times during a 1 year period based on EE:heart rate (HR) of each doeling. Climate variables were averaged over 2, 4, 6, and 8 weeks preceding EE measurement. Doelings were fed to meet the maintenance energy requirement (MEm). Average mean, low, and high values during the 2 weeks preceding EE determination were 68, 46, and 89 °F for Ta and 53.6, 36.1, and 62.5% for RH, respectively. Neither Ta nor THI were correlated with or had significant effects in regressions to predict the difference between EE at particular measurement times and the 1 year mean (EEdiff). Conversely, RH was correlated with EEdiff. When the 13 HR measurement times were assigned to cool and warm seasonal periods, EEdiff was affected by a genotype × period interaction. Nonetheless, the effect of RH in models including genotype, period, and genotype × period was significant for 2, 4, 6, and 8 weeks. The R^2 of linear regressions of EEdiff against RH was slightly greater for 2 and 4 vs. 6 and 8 weeks (0.11, 0.10, 0.08, and 0.07, respectively). In conclusion, without extremes eliciting cold or heat stresses, RH appears to have a slight effect on MEm of meat goats by acclimatization in both cool and warm periods of the year.

A.K. Patra, R. Puchala, G. Animut, T.A. Gipson, T. Sahlu and A.L. Goetsch. 2009. Effects of acclimatization on energy expenditure by meat goats. Small Rumin. Res. 81:42-54 .

Editor's note: Temperature-humidity index is an indicator of heat stress in livestock and is analogous to the heat index for humans.

Ethiopia Sheep and Goat Project Update

Genetic diversity is important for any livestock breed. This is especially true for small populations such as the Boer goats that were imported into Ethiopia under the auspices of the Ethiopia Sheep and Goat Productivity Improvement Program funded by United States Agency for International Development. Recently, a team of animal scientists from Prairie View A&M University and Langston University traveled to Ethiopia to assist the project with maintaining diversity.

Dr. Louis Nuti of Prairie View A&M University inseminates a Boer doe as ESGPIP personnel assist.

In November, Dr. Louis Nuti of Prairie View A&M University traveled to the Adami Tulu Nucleus Herd site and the Hawassa Nucleus Herd site to conduct artificial insemination for the expressed goal of introducing new South African Boer genetics. Dr. Nuti is a reproductive physiologist with vast experience in artificial insemination and reproductive technologies in goats. In December, Mr Erick Loetz of Langston University traveled to the Adami Tulu and Hawassa sites to conduct a follow-up insemination on any female that returned to estrus. Mr. Loetz is the research farm manager at Langston University and is conducting his doctoral studies in reproductive physiology.

Mr. Erick Loetz of Langston University inseminates a Boer doe at the Adami Tulu Nucleus Herd site.

Drs. Terry Gipson and Roger Merkel of Langston University also traveled to Ethiopia in November and December, respectively, to work on other aspects of the project and to assist Dr. Nuti and Mr. Loetz.

Mr. Erick Loetz at the entrance of the Hawassa Nucleus Herd site.

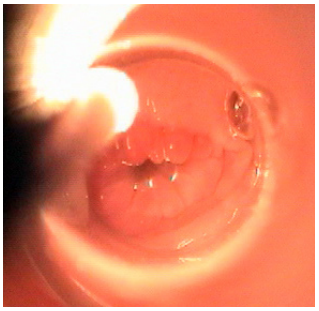
Dr. Louis Nuti enjoying traditionally roasted and brewed coffee.

Artificial Insemination Workshops

The Goat Extension Program will be conducting three artificial insemination workshops in the fall of 2011. The schedule will be:

1. Langston University on Saturday, September 10, 2011.
2. Langston University on Saturday, September 24, 2011.
3. Pushmataha County Fairgrounds in Antlers, OK on Saturday, October 8, 2011.

Dr. Terry Gipson of Langston University and Dr. Lionel Dawson of Oklahoma State University will be presenters at all three workshops. Mr. Les Hutchens of Reproduction Enterprises, Inc. will be a presenter at the Langston workshops and Mr. Mark Mouttet will be a presenter at the Antlers workshop.



The cervix of a doe.

All three workshops will be hands-on and will follow the same format. Workshops will present basic anatomy and physiology of goats, estrus detection and synchronization in goats, and semen handling. Participants will have the opportunity to practice with harvested reproductive tracts and with live animals. Registration for each workshop is limited to 20 participants. Registration fee is $45 per person. Included in the cost of registration are handouts and snacks for breakfast and breaks. ***Lunch is not included.***

Learn about semen handling.

For information regarding the AI workshops, contact Dr. Terry Gipson at 405-466-6126 or tgipson@luresext.edu. Registration forms are available online at: http://www2.luresext.edu/goats/extension/workshops_field_day.htm

Practice with live animals.

Noteworthy News

►In November, Drs. **Terry Gipson** and **Roger Merkel** traveled to Ethiopia to work on activities of the Ethiopia Sheep and Goat Productivity Improvement Program.

►In November, Drs. **Art Goetsch**, **Ryszard Puchala**, **Zaisen Wang**, and **Steve Zeng** presented research findings at the Research Day Conference at Cameron University in Lawton, OK.

►In December, Mr. **Erick Loetz** and **Roger Merkel** traveled to Ethiopia to work on activities of the Ethiopia Sheep and Goat Productivity Improvement Program.

►In December, Dr. **Terry Gipson** traveled to Alabama A&M University to participate in a Goat Industry Community of Practice Leadership meeting for the national eXtension initiative.

►In December, Dr. **Roger Merkel** attended the conference "Building Sustainable U.S. – Ethiopian University Partnerships" in Addis Ababa, Ethiopia.

►In December, Dr. **Abdelhafid Keli** completed his research project at the institute and returned to his position at the Ecole Nationale d'Agriculture in Meknès, Morocco.

►In December, Dr. **Joseph Kim**, retired veterinary pathologist from Pennsylvania Veterinary Diagnostic Laboratory and currently a veterinary missionary and visiting professor at the University of San Carlos in Guatemala, visited the institute to discuss potential collaboration.

►In December, Ms. **Rulan Shangguan** successfully completed all requirements and graduated with a M.S. degree in Animal Science from Oklahoma State University. Her joint advisors were Dr. **Leon Spicer** of OSU and Dr. **Steve Zeng** of Langston University and her thesis topic was on the effect of sub-clinical mastitis in dairy goats on composition and plasmin activity of milk.

►In December, Dr. **Tilahun Sahlu** traveled to Ethiopia to work on administrative activities of the Ethiopia Sheep and Goat Productivity Improvement Program.

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