Goat Newsletter

Cooperative Extension Program
Langston University

The Newsletter of the E (Kika) de la Garza American Institute for Goat Research *Summer 2005*

From the Director's Desk

Dr. Tilahun Sahlu

Normally, I would start my column with a discussion of the various recent research and extension activities of the institute; however, with this newsletter, I would like to start with a discussion about the skeleton or physical plant of our institution because we have just moved into our new agriculture building.

Our new research building houses all of Langston University's components affiliated with agriculture research, cooperative extension, outreach, and agricultural teaching. Laboratory space accounts for approximately 30% of the 56,000 square foot building. We have always been proud of our state-of-the-art laboratory and now we have an exceptional building in which to house it. Research scientist and extension personnel associated with the goat program are officed in close proximity to each other. This will facilitate even closer cooperation amongst our scientists and extension personnel. With the new building, we have a new telephone system and you will be able to find our new telephone numbers on page 5 of this newsletter, as well as a photo of the new building.

Back to research, there are many experiments underway, among which is one dealing with effects of a condensed tannin-containing forage on methane production, being conducted by Drs. **Getachew Animut** and **Ryszard Puchala**. For this and subsequent experiments that are part of this project, Getachew and Ryszard spent one week at the USDA Agricultural Research Service Meat Animal Research Center in Clay Center, Nebraska, receiving training from Drs. Vince Varel and James Wells in rumen microbiology experimental techniques. One additional note that brings out an important point about research is that this project arose from a preliminary experiment conducted a couple of years ago. Dynamic research programs base experimentation on previous findings.

A lactating dairy goat study is being conducted by Drs. **Thomas Ngwa**, **Maristela Rovai**, **Art Goetsch**, and **Terry Gipson**. The composition of tissue being lost or gained in different stages of lactation is a focal point, as well as developing techniques to be used in a future extended lactation project to characterize changes in mammary gland physiology. Another experiment that just began is in the West Pasture area. Here Drs. **Animut**, **Roger Merkel**, and **Goetsch** and Mr. **Glenn Detweiler** are comparing effects of pasture fertilization, supplementation, and presence of the tree legume mimosa on performance of Spanish does and their twin kids. In regards to this and all the other experiments, a special note of appreciation goes to Mssrs. **Erick Loetz** and **Jerry Hayes**, as well as the other hard-working members of the farm crew. Without their dedication, per-

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severance, and positive "of course we can do that" attitude, our accomplishments would not be possible.

Concerning extension activities, attendance at our annual Goat Field Day keeps going up year after year, which makes us feel very proud. Even though attendance is important, the objectives of our Goat Field Day are to provide education and training in areas of interest and importance to goat producers and to provide a setting for communication among producers and between producers and Langston University personnel.

This year, we had 404 Goat Field Day participants with 75% coming from Oklahoma. Other states represented were Arkansas, Arizona, California, Colorado, Iowa, Kansas, Missouri, Nebraska, and Texas. Approximately 25% of the participants were youth with about half attending the Fun Tent and the other half attending the Fitting and Showing workshop.

This year's theme was *Quality Assurance: Delivering a Wholesome Product to Market*. Our featured speakers were Dr. Ann Wells and our own Drs. **Steve Hart** and **Roger Merkel**.

Dr. Wells is a veterinarian with more than 20 years experience in livestock production. She spoke on the topic of *Herd Health and Quality Assurance* in the morning session and on *How to Help Your Vet Help You* and on *Sustainable Parasite Management for Goats* in the afternoon sessions. Dr. **Roger Merkel** spoke on the topic of *Why Have A Quality Assurance Program for the Goat Industry?* and Dr. Steve Hart spoke on the topic of *Quality Assurance for Goat Nutrition* in the morning session.

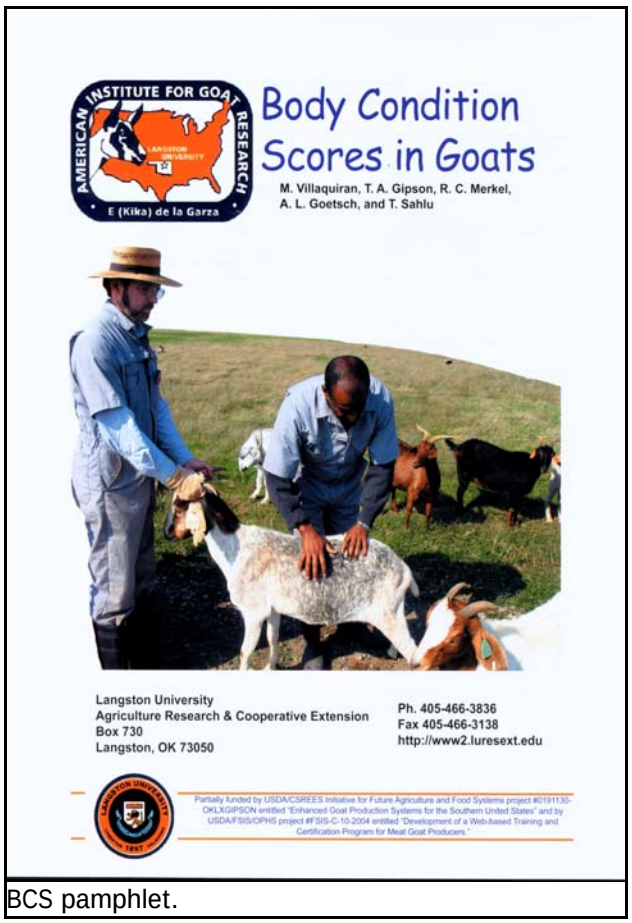
In the afternoon, Dr. **Merkel** spoke on *A Meat Goat Quality Assurance Program* and Dr. **Hart** on our *Interactive Nutrient Calculator*. The Goat Field Day had several other practical afternoon sessions as well. In addition to these presentations, there were two youth programs in the morning and two in the afternoon. For the younger youth, there was a craft project and games played during the morning and afternoon. Older youth and interested adults were able to participate in a full-day clipping, fitting, and showing workshop conducted by Kay Garrett and Mary and Jim Daniel.

Don't be too disappointed if you were unable to make it to the Goat Field Day this year, the proceedings are available on our website (http://www2.luresext.edu).

We are already making plans for next year's Goat Field Day and if you have any suggestions as to how we can improve our field days, please do not hesitate to contact me.

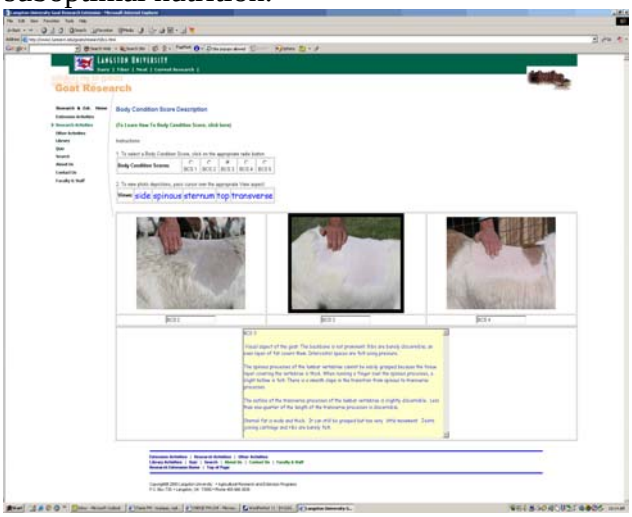
Body Condition Scoring Educational Tools

Every goat producer has animals that are either too thin (under-conditioned) or too fat (over-conditioned). Failure to recognize these animals and take corrective actions will cost dearly in terms of decreased fertility, increased disease or internal parasite incidence, decreased milk production, and increased operating costs. Thus, goats need to be maintained with a moderate amount of body condition. When overall body condition starts to decrease in the herd, it is a sign that managerial intervention is needed such as supplemental feeding, deworming, pasture rotation, etc. Conversely, when overall body condition increases excessively in the herd, it is a sign that the producer should reduce supplemental feeding. Ignoring an animal's body condition and waiting to intervene until goats become either too thin or too fat may result in production and(or) animal losses or decreased profits from overfeeding. Producers need to develop skills in assessing body condition of their goats so that a desired moderate body condition can be maintained.



BCS pamphlet.

Body condition score (BCS) has been shown to be an important practical tool in assessing the body condition of cattle, sheep, and goats because BCS is the best simple indicator of available fat reserves which can be used by the animal in periods of high energy demand, stress, or suboptimal nutrition.



BCS website (http://www2.luresext.edu/goats/research/bcs.html).

We have developed two educational tools for assisting goat producers with body condition scoring in goats. The first is a BCS pamphlet, which we have enclosed in this mailing, and a web site (http://www2.luresext.edu/goats/ research/bcs.html). We hope that you will incorporate this valuable tool into your herd management.

For information regarding BCS, contact Dr. Terry Gipson at (405) 466-6126 or tgipson@luresext.edu.

BCS pamphlet and website partially funded by USDA/CSREES Initiative for Future Agriculture and Food Systems project #0191130-OKLXGIPSON entitled "Enhanced Goat Production Systems for the Southern United States" and by USDA/FSIS/OPHS project #FSIS-C-10-2004 entitled "Development of a Web-based Training and Certification Program for Meat Goat Producers."

New Contact Information

We now have direct telephone lines in our new offices and new telephone numbers. However, our email addresses have remained the same. Please use the new telephone numbers when contacting us.

Personnel	Title	Telephone Number	Email Address
Dr. Marvin Burns	Dean	405-466-6149	mburns@luresext.edu
Dr. Tilahun Sahlu	Research director	405-466-6148	sahlu@luresext.edu
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Dr. Zaisen Wang	Research Scientist	405-466-6142	zwang@luresext.edu
Dr. Steve Zeng	Research Scientist	405-466-6103	szeng@luresext.edu

New Research Building as seen from the southeast. Most goat research personnel are housed on the east side.

Meat Goat Certification Project Update

Langston University and cooperators continue to make progress on the project to develop educational material for a web-based meat goat certification project. Cooperators are:

- Alcorn State University
- American Meat Goat Association
- American Boer Goat Association
- American Kiko Goat Association
- Florida A & M University
- Fort Valley State University
- Kentucky State University
- Prairie View A&M University
- Southern University
- Tennessee State University
- Tennessee Goat Producers Association
- Tuskegee University
- University of Arkansas Pine Bluff
- USDA/FSIS
- USBGA
- Virginia State University

In June, collaborators met in Dallas to discuss modules and the progress of the project. We will be seeking volunteers for a beta-test of the web site in the late summer or early fall. If you are interested in being a beta-tester, please contact Dr. Steve Hart.

For information regarding the certification project, contact Dr. Steve Hart at (405) 466-6138 or shart@luresext.edu.

beta test (noun) = the final stage in the testing of new software before its release, conducted by testers other than its developers.

2005 Buck Performance Test

The ninth annual meat buck performance test started May 7, 2005 with 62 bucks enrolled from 19 different breeders. Breed and geographical distribution are given in the table below.

State	Boer	Kiko	Savanna	Grand Total
KS	2			2
MO	4			4
NE	4			4
OK	5	6	3	14
TX	36	2		38
Grand Total	51	8	3	62

Bucks were given a physical examination by Dr. Lionel Dawson, dewormed, deloused, and those bucks that needed booster or initial vaccination for enterotoxemia and CL were given those vaccinations.

The public is invited to attend the mid-point report on July 9 and the final report on August 20, 2005. Both reports will be held at the South Barn, location of the buck performance test, and each will begin at 11:00 am.

For information regarding the buck performance test, contact Dr. Terry Gipson at (405) 466-6126 or tgipson@luresext.edu.

Goat Milk Soapmaking Workshop

An additional Goat Milk Soapmaking Workshop has been scheduled at Langston University on **Friday, September 9, 2005** due to tremendous interest. The workshop starts at 1:30 pm and ends 4:30 pm. Principles of basic soapmaking and functions of each major ingredient will be illustrated and practical procedures demonstrated in this hands-on workshop.

The first 30 registrants will be enrolled with priority given to those who registered but did not get in our previous workshop on April 29. There will be a registration fee of $15.00 per attendee. A handout and refreshments will be provided.

For information regarding the goat milk soapmaking workshop, contact Dr. Steve Zeng, our Dairy Product Specialist, at (405)466-6103 or szeng@luresext.edu.

Artificial Insemination Workshops

Dr. Lionel Dawson presenting on estrous detection at the AI workshop in Tahlequah.

The Goat Extension Program will be conducting two artificial insemination workshops this fall. The schedule will be:

1. ~~*Langston University on Saturday, September 10, 2005,*~~ ***workshop full***
2. *Cherokee County Fairgrounds in Tahlequah, OK on Saturday, October 8, 2005.*

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 fresh reproductive tracts and with live animals.

Registration for each workshop is limited to 20 participants. The September workshop has already reached the maximum number of participants ; however, the October workshop is still open. Registration fee is $30 per person. Included in the cost of registration are handouts and lunch.

For information regarding the October AI workshop, contact Dr. Terry Gipson at (405) 466-6126 or tgipson@luresext.edu. Registration form is available online at http://www2.luresext.edu/goats/extension/workshops_field_day.htm

Research Spotlight

Abstracted by A. Goetsch

Domiati Cheese Yield.

Twenty lactating Alpine goats were randomly allocated to four treatment groups to investigate the effect of pasture feeding with different levels of concentrates on composition of Alpine goat milk and quality of Domiati cheese during lactation. Goats in Group A were confined and fed alfalfa hay with 0.66 kg/d of concentrate mixture per 1.5 kg of milk. Groups B, C and D were rotationally grazed and received 0.66, 0.33, and 0 kg/d of concentrate supplementation, respectively. Milk from each group was processed into Domiati soft cheese twice monthly for a 6-month lactation period. Fresh cheese samples were evaluated for sensory quality. The results obtained from this experiment indicated that goats fed a high concentrate level with pasture grazing (Group B) produced milk with significantly higher contents of fat, protein and total solids and thus had a higher cheese yield than goats kept on pasture alone (Group D) or under a confined feeding system with concentrate and hays (Group A). The change of Domiati cheese yield over lactation followed the same trends of fat, protein and total solids in goat milk. Contents of milk fat, protein and total solids were highly positively correlated with Domiati cheese yield. The milk fat content had an adverse effect on the cheese flavor score while the level of total fatty acids in milk was positively correlated with the flavor score. Further research is needed to investigate the economical efficiency of milk production using concentrate supplementation to lactating goats and the processing functionalities of goat milk for cheese manufacturing.

K. A. Soryal, S. S. Zeng, B. R. Min, S. P. Hart, F. A. Beyene. 2004. Effect of feeding systems on composition of goat milk and yield of Domiati cheese. Small Ruminant Research 54 121-129.

Growth on Concentrate Diets.

Forty-five weaned wether goats (12 Alpine, 12 Angora, 10 Boer [87.5%] and 11 Spanish) were used to determine effects on growth performance of consumption of a 75% concentrate diet (DM basis) for 24 wk (75C) or for 12 wk subsequent to 12 wk of feeding a 50% concentrate diet (50C). Initial BW was 20.2, 12.2, 20.7 and 19.2 kg for Alpine, Angora, Boer and Spanish, respectively, and age was 4 months when the experiment began. DM intake in wk 1-12 ranked Alpine and Boer > Spanish > Angora (703, 689, 567 and 436 g/day) and in wk 13-24 was significantly greater for Alpine and Boer vs. Angora and Spanish (712, 702, 515 and 456 g/day). DM intake was similar between dietary treatments. In wk 8, OM digestibility was 79.3 and 71.3% and NDF digestibility was 54.2 and 52.1% for 75C and 50C, respectively. ADG in wk 1-12 was greatest for Boer (59, 59, 90 and 49 g/day for Alpine, Angora, Boer and Spanish, respectively); in wk 13-24 ADG was lowest for Spanish (25 g/day) and tended to be greater for Boer vs. Alpine (82 vs. 58 and 63 g/day). Gain efficiency (ADG:DM intake) was greater for Angora and Boer than for Alpine and Spanish in wk 1-12 (132 and 127 vs. 85 and 85 g/kg), and in wk 13-24 was lower for Spanish than for Angora and Boer (80, 121, 104 and 51 g/kg for Alpine, Angora, Boer and Spanish, respectively). ADG and gain efficiency were greater for 75 vs. 50% dietary concentrate in wk 1-12 (ADG: 73 and 55 g/day; gain efficiency: 122 and 92 g/kg), and tended to be greater for 50C than for 75C in wk 13-24 (ADG: 49 and 65 g/day; gain efficiency: 77 and 101 g/kg for 75C and 50C, respectively). In conclusion, differences in growth performance among Alpine, Angora, Boer and Spanish wether goats were similar with 50 and 75% concentrate diets, and the genotypes responded similarly to the change in dietary concentrate level from 50 to 75%.

M. Urge, R. C. Merkel, T. Sahlu, G. Animut, and A. L. Goetsch. 2004. Growth performance by Alpine, Angora, Boer and Spanish wether goats consuming 50 or 75% concentrate diets. Small Ruminant Research 55:149-158.

Noteworthy News

In March, Drs. **Terry Gipson**, **Ryszard Puchala**, and **Steve Zeng** traveled to New Orleans, LA to attend the CSREES/SERD Project Directors' Conference.

In April, Dr. **Steve Hart** gave a seminar on nutrition and internal parasites in Arkansas at the Arkansas Meat Goat Conference and conducted an in-service workshop on goat management in southeastern Oklahoma for county Extension Agents.

In April, the Institute was notified of the approval of funding by the USDA International Science and Education Competitive Grants Program of a project entitled "International Collaboration in Goat Research and Production Web-Based Decision Support Aids." This is a collaborative project with four institutions in China, France, Jordan, and Mexico.

In May, Dr. **Steve Hart** traveled to Heifer Project International Ranch in central Arkansas to participate in small ruminant training session for 1890 institution Extension personnel.

Also in May, Dr. **Steve Hart** conducted two internal parasite workshops, one at Langston and the other in Anadarko, OK.

In May, Drs. **Ryszard Puchala** and **Getachew Animut** spent one week at the USDA Agricultural Research Service Meat Animal Research Center in Clay Center, Nebraska, receiving training from collaborating scientists Drs. Vince Varel and James Wells in rumen microbiology experimental techniques.

In June, Drs. **Terry Gipson**, **Steve Hart**, **Roger Merkel**, and **Tilahun Sahlu** traveled to Dallas, TX to meet with collaborators in the "Development of a Web-based Training and Certification Program for Meat Goat Producers" project for the second planning meeting.

In June, Dr. **Steve Hart** gave a seminar on goat herd health to the Oklahoma Youth Meat Goat Association.

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