E. (Kika) de la Garza Institute for Goat Research • OKLAHOMA •

Goat Newsletter

Cooperative Extension Program
Langston University

The Newsletter of the E (Kika) de la Garza Institute for Goat Research *Spring 2002*

From the Director's Desk

Dr. Tilahun Sahlu

Time passes so quickly. It seems like just yesterday I was putting the last "From the Director's Desk" section together. Perhaps this is because we are so busy this time of year, with presentations for the Southern ASAS meetings, submission of abstracts for the national ASAS/ADSA meetings shortly thereafter, a number of grant programs with deadlines in the early part of the year, etc. And of course we have preparations for kidding and many new studies.

Regarding research and new studies, occasionally over the years some people have commented that our program is focused on nutrition. We do have a strong program in feeding and nutrition that we are proud of, and in fact many of the research activities fall into this general category. However, our program is not limited to this area, examples being the lactational physiology/mastitis work of Dr. **Grant Tomita**, growth and fiber physiology emphasis of Dr. **Ryszard Puchala**, grazing/forage management and parasitology activities of **Dr. Steve Hart**, and goat milk product technology experimentation of Dr. **Steve Zeng**.

Currently, Drs. **Chuntian Zheng**, **Ignacio Tovar Luna**, and **Ryszard Puchala** are running a trial to assess energy requirements for maintenance and growth of young Boer × Spanish and Spanish goats, using some of last year's Fall born kids.

Spring is also the time for our annual Goat Field Day. This year our field day will be on Saturday, April 27. This year's theme will be *Creating Your Own Market*. We will have presentations from goat entrepreneurs who have created their own markets in meat, dairy and weed control.

We will also have afternoon workshops where you will be able to learn more about specified topics. This year we will also have a cheesemaking workshop preceding the field day.

Pure Luck Texas will again come to Langston to conduct a full-day cheesemaking workshop. This workshop will take place the day before the annual Goat Field Day. Pure Luck Texas' chevre cheese has captured first place at the American Cheese Society's annual contest for four consecutive years and its feta and Ste. Maure took second place last year.

For complete details of this year's field day, see page 3.

On page 7 of the newsletter, you will find a tentative schedule of this year's extension activities. This year's activities include cheesemaking workshops, annual Goat Field Day, meat buck performance test, sustainable internal parasite control workshops, and artificial insemination workshops. *Reserve your place today for the individual workshops.*

Make plans today to attend the Goat Field Day

Goat Newsletter is published quarterly by the Cooperative Extension Service of the E (Kika) de la Garza Institute for Goat Research, Langston University, Langston, Oklahoma.

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Newsletter Editor
Dr. Terry A. Gipson

Meet the Faculty & Staff

Mr. Sherman Lewis

Mr. Sherman Lewis was born and raised on a farm west of Beggs, Oklahoma in Okmulgee County. He attended Tolon Grade School, a two-room country school, for the first eight years of his education.

From there he attended Beggs-Wheatley High School and graduated in 1960. Upon graduation from Wheatley High School, he entered Langston University in the fall of 1960. He graduated four years later with a Bachelor of Science Degree in Agricultural Economics and a minor in Mathematics. Upon graduation from college, he entered the military where he served for two years.

Following his military service, he started his professional career with the U.S. Department of Agriculture – Soil Conservation Service. During his career with the Soil Conservation Service, he and his family had the opportunity to work and live in many different states, including Oklahoma, Washington, Idaho, Oregon, Massachusetts, Nebraska, and the last ten years of his career in Washington, D.C.

During his career with the Soil Conservation Service, he was selected by the Department of Agriculture in 1976 to participate in the Executive Development Program and attend the Harvard University Graduate School. In 1977, he received his Master's Degree in Public Administration from the John F. Kennedy School of Government.

He retired in 1997 as Deputy Administrator for Management and Strategic Planning, the Number Three (3) position in the national agency. Upon retirement, he returned to Langston University to become Director of the Center for Outreach Programs.

As Director of the Center for Outreach Programs, he recruits students for the School of Agriculture and Applied Sciences, develops partnerships with federal and state agencies to provide scholarships, summer internships and career opportunities upon graduation. He also provides technical assistance to small farmers and rural residents, small minority owned businesses, and nutrition education to individuals receiving food stamps. In December of 2002, he was appointed as Associate Administrator for Extension and Outreach.

He is married to Berniece Lewis and they have two adult children. Their daughter, Orgena Lewis, is Assistant Dean of the South Texas School of Law in Houston, Texas, and their son, Sherman Lewis III, is an Executive with Apple Computer Company in Reston, Virginia.

Mr. Sherman Lewis can be reached at (405) 466-6016 or at (405) 466-3836.

2002 Goat Field Day - Creating Your Own Market

Our annual Goat Field Day will be held on Saturday, April 27, 2002 at the Langston University Goat Farm with registration beginning at 8:00 a.m. This year's theme will be *Creating Your Own Market*. This year, we will hear from goat entrepreneurs who have created their own markets in weed control, meat, and dairy. Ms. Lani Lamming is owner/operator of Ewe4-ic Ecological Services of Alpine, WY. Ms. Lamming owns a herd of more than 600 goats and provides an environmentally friendly alternative to herbicides. Her company has worked in Colorado, Montana, Wyoming, Nebraska, Oklahoma and Utah. Our speaker for meat goats has not yet been confirmed; however, a nationally recognized leader is being sought for this year's Goat Field Day. Mr. Denny Bolton, of Pure Luck Texas, handles the marketing, packing, deliveries, customer relations and paperwork for that goat cheese business. Pure Luck Texas' chevre cheese has captured first place at the American Cheese Society's annual contest for four consecutive years. Each of the three morning presenters will also conduct afternoon workshops.

In the afternoon session, participants will break into small-group workshops in addition to the three aforementioned workshops. There will be a total of ten workshops; however, participants will only have time enough to attend three. Afternoon workshops include: 1) marketing weed control, 2) marketing meat goats, 3) marketing dairy products, 4) scrapie control information, 5) basic goat husbandry I, 6) basic goat husbandry II, 7) inbreeding in dairy goats, 8) goat production & quality assurance, 9) forage-based dairy goat management, and 10) pedigree analysis.

For youth, there will be a Fitting & Showing for Meat Goats workshop in the morning. This workshop will be conducted by Ms. Kim Perschbacher, coordinator of the Oklahoma Youth Meat Goat Association. Each youth will have the opportunity to fit and show a goat during this workshop. We will have a show ring and a judge to assess showmanship.

You can bring your own lunch and picnic on the grounds or you can pre-register for a lunch of barbecued goat, beans, potato salad, refreshments and goat milk ice cream. Cost of the lunch is only $7.00 per person.

In addition to the Fitting & Showing workshop, there will also be a youth program in the afternoon. For the younger youth, there will be a craft project and games to play during the morning and afternoon. Therefore, the parents of young children will be able to enjoy the morning and afternoon session while their children are entertained.

Again, this year we will have a cheesemaking workshop conducted by Pure Luck Texas of Dripping Springs, TX. However, this year we will have a full-day cheese workshop the day before the Goat Field Day (Friday, April 26). This workshop will provide participants with a unique, hands-on experience of making cheese with award-winning artisans. In 1998, Pure Luck entered the American Cheese Society competition and won a Blue Ribbon with their Del Cielo in the "Farmstead Goat Cheese" category. In 1999, Pure Luck won another Blue Ribbon, this one for Basil Pesto Spread, made with fresh organic basil grown on the farm. In 2000, Pure Luck won a Blue Ribbon for the Restaurant Pack in the Fresh Goat's Milk Cheese Category. In 2001, Pure Luck won a Blue Ribbon for their Basked Molded Chevre in the category of Farmstead Goat Cheese, a Red Ribbon for Feta in the category of Goat Milk Feta, and a Red Ribbon for Ste. Maure, a soft ripened log in the Soft Ripened Goat Cheese category.

Registration for the Goat Field Day is FREE but there is a $7.00 per person charge for the optional barbecued goat lunch. A pre-registration form is enclosed in this newsletter for your convenience.

For information regarding the 2002 Goat Field Day, contact Dr. Terry Gipson at (405)466-3836 or at tgipson@luresesext.edu or http://www2.luresext.edu /goats/library/fd2002.html .

Goat Management Tips - Diseases

Abortion Diseases (Continued from last newsletter) *by Lionel Dawson, D.V.M.*

Abortions can account for significant economic losses to the goat producer, however, the impact is often unrecognized unless a severe outbreak occurs. Most abortions in goats, especially those of an infectious nature, occur in the last 50 days of the gestation period. Common infectious causes of abortion are Toxoplasmosis, Chlamydiosis, Salmonellosis, Brucellosis, Listeriosis, Leptospirosis and Q-Fever. Proper samples should be submitted to get a definitive diagnosis in an abortion outbreak caused by an infectious agent.

Abortion Diagnosis

A reliable rapid laboratory diagnosis of abortion depends on the correct selection, processing, storage and shipment of specimens. In addition, a comprehensive herd history and history of the abortion outbreak should be submitted with the specimens.

1. Placenta – Include cotyledon and intercotyledonary areas: Select areas of placenta that appear to be abnormal. Both fresh and formalin fixed samples should be submitted.

2. Fresh whole fetus chilled but not frozen is first choice when rapid delivery (within 48 hours) is possible, to the laboratory.

3. When a whole fetus cannot be submitted fresh and formalin fixed.
   a. Fetal liver
   b. Fetal lung
   c. Fetal abomasums and contents (fresh only)
   d. Fetal heart blood
   e. Fetal pleural and peritoneal fluid
   f. Fetal brain

4. Serum separated from the clot and frozen (collected from the doe).

5. Frozen tissue is usually suitable for virus and most bacteriological examinations but not for histopathology examination.

6. Fresh tissue for bacteriological examinations should be packaged individually in sterile sealed containers and chilled.

7. Blood for virus isolation should be in Na-Heparin tubes and chilled ASAP

The following table discusses the infectious causes of abortions: (**This is a partial table; Toxoplasmosis, Enzootic Abortion and Salmonellosis were tabulated in the previous newsletter.**)

Disease	Transmission	Clinical Features	Diagnosis	Diagnostic Aids	Control
4. **Brucellosis:** Brucellosis melitensis affects goats and sheep and other species including man. It is seen in Europe, Mediterranean countries, Africa, Central America and rarely in the United States. B. abortus occasionally affects does.	Ingestion is the main method of transmission, especially during the kidding period. Droplet inhalation and entry both through the conjunctival membrane and broken skin occasionally occurs. Venereal transmission following natural mating is rare.	Abortions in late pregnancy, stillbirths and birth of weak infected kids may occur. Congenital infections may persist throughout life (especially B. melitensis). Systemic effects may be seen in the dam with fever, lameness (associated with joint swellings), sometimes central nervous system (CNS) signs.	The essential lesion is placentitis, with edema and necrosis of cotyledons. The intercotyledons membrane may be thickened, yellow-brown necrotic areas, often with adjacent hemorrhage. Mucopurulent material may be adherent to the allantochorion. Fetus shows usual signs of intrauterine death.	Culture and direct microscopy are used to identify organisms that are plentiful in the placenta, fetal stomach and vaginal discharge of the doe. Modified Ziehl-Nielsen technique is satisfactory for staining for direct microscopy. Complement fixation (CF) test on sera of aborting does.	Test and slaughter policy can be used when the disease is prevalent. Testing of replacement animals. General hygiene at kidding.

Disease	Transmission	Clinical Features	Diagnosis	Diagnostic Aids	Control
5. **Listeriosis** (L. monocytogenes or L. ivanovii)	Ingestion, inhalation, conjunctival, and veneral (?).	Abortion occurs from day 50 of gestation onward. Some born alive but die. Metritis and septicemia common in females. Placentitis, around the cotyledon and intercotyledon areas. Kids grafted to the aborting females can contract Listeriosis through the milk, develop septicemia and die.	Necrotic grey-yellow foci (102 mm diameter) in the liver and sometimes in the lung.	Culture from fetal stomach, liver and placenta. Fluorescent antibody test on the placenta.	Isolation of aborting females. Do not feed spoiled silage or poorly fermented silage. During outbreak administration of long acting tetracycline at 20 mg/kg every 72 hours. Chlortetracycline in the feed 300mg/head/day.
6. **Leptospirosis** (L. icterohaemorrhagiae, L. grippotyphosa and L. pomona): Have been reported as primary causes of abortion in goats.	Secreted in the urine. Transmission is through skin or mucousal abrasions.	Clinical signs include anorexia, anemia, jaundice, hemoglobinuria, abortion and death.	Anemia Jaundice Hemoglobinuria Abortions	Dark field microscopy, Immunofluorescence testing and silver stains on placenta, fetal tissue and fluids. Paired serum samples from aborting does.	Vaccine Rodent control clean water supply separating and isolating the aborting does Tetracycline 300 to 500 mg/head/day
7. **Q-Fever** (Coxiella burnetii): It affects sheep, goats, cattle and other wild life. This organism is shed heavily in placentas, birth fluid, colostrum and milk.	Inhaling dust, grazing contaminated pastures and tick bites.	Abortion in last 2-4 weeks. Fetus autolyzed. Some kids born alive. Aborting does usually retain their placenta.	Late term abortion and stillbirth. Placetitis with clay colored colyledons and intercolyedonary thickening.	Serology – titre>1:20. Colyledons or fetal abomasal contents modified–Ziel-Nielsen stain and Fluorescent antibody test.	Producers should burn or bury the placenta. Oral chlortetracycline 200 mg/head/day for 3 weeks. Long acting tetracycline 20 mg given s/c or 1/m every 3 days for 5 treatments.

Reproduction is considered to be the single most important factor contributing to the efficiency of a goat production enterprise. Goats are fecund and prolific. Every producers goal is to have a healthy kid crop, like those pictured. This combination of reproductive parameters suggests a highly efficient producing animal. However, disease can alter this efficiency, resulting in reproductive wastage.

For more information regarding goat diseases, contact Dr. Lionel Dawson at (405) 744-8580 or at dlionel@okstate.edu

Research Spotlight

Abstracted by A. Goetsch

Meat Goat Production Systems.

The number of Boer crossbred meat goats has been increasing rapidly, although how their growth and harvest traits compare with those of Spanish goats and influences of maternal genotype have not been thoroughly evaluated. This information would be useful to achieve optimal meat goat production systems and yield of goat products desired by consumers. Therefore, postweaning growth (9 to 24 weeks of age) and harvest traits (212 ± 5.0 days of age) of Boer × Spanish, Spanish, and Boer × Angora wethers consuming a concentrate-based diet were compared. Live weight gain was greater for Boer crossbreds than for Spanish wether goats, with little or no difference between Boer × Spanish and Boer × Angora goats. Because of more rapid growth of Boer crossbreds than of Spanish goats, weights of the carcass and primal cuts were greater or tended to be greater for Boer crossbreds. However, relative to carcass or empty body weight, under production conditions similar to this experiment, slaughter and carcass variables should be similar for Boer × Spanish, Boer × Angora, and Spanish goats.

M. C. Cameron, J. Luo, T. Sahlu, S. P. Hart, S. W. Coleman, and A. L. Goetsch. 2001. Growth and slaughter traits of Boer × Spanish, Boer × Angora, and Spanish goats consuming a concentrate-based diet. Journal of Animal Science 79:1423-1430.

Enhancing Mohair Fiber Growth.

Growth hormone and bovine somatotropin have had variable effects on wool growth, but their impact on mohair growth is unclear. In this experiment 48 Angora goats (24 wethers and 24 doelings; 5 months old; 16 ± 0.5 kg initial body weight) were used to evaluate effects of recombinant bovine somatotropin (bST) administration and thyroid hormone status (euthyroid [normal thyroid levels], hypothyroid [low levels], and hyperthyroid [high levels]) on hormone levels, average daily gain, and mohair growth. The bST used was a slow release zinc-based suspension with sustained delivery (100 µg/kg body weight per day) over a 14-day period. Hyperthyroidism was maintained by daily treatment with thyroxine (150 µg/kg body weight per day), and hypothyroidism was achieved by feeding 6 mg/kg body weight per day of propylthiouracil. Dry matter intake was greatest for euthyroid-bST (794 g/day), and similar among hypothyroid treatments (693 and 703 g/day for control and bST, respectively) and euthyroid-control (681 g/day), and lowest for hyperthyroid groups (554 and 518 g/day for control and bST, respectively). Average daily gain for hyperthyroid goats (11 g/day) was lower than with hypothyroidism and euthyroidism (72 and 73 g/day, respectively). Mohair fiber growth was greater for hyperthyroidism (0.133 g/100 cm^2 per day) than for hypothyroid and euthyroid goats (0.102 and 0.104 g/100 cm2 per day, respectively), and hyperthyroidism also decreased fiber diameter by 7.8%. Results demonstrated a complex interaction between exogenous growth hormone administration and thyroid hormone status in Angora goats. Treatment with bST blocked effects of propylthiouracyl, allowing maintenance of normal concentrations of thyroid hormones. Treatment with thyroxine prevented an increase in insulin-like growth factor-I plasma concentration due to bovine somatotropin. Based on these findings, exogenous growth hormone administration does not appear to influence mohair fiber growth, regardless of thyroid hormone status, and, thus, its effects may differ from those on other tissues/organs. The substantial effect of thyroxine administration on mohair fiber growth, despite decreased feed intake and live weight gain, implies a major role of thyroid hormone status. Such research may lead to future means of enhancing mohair fiber growth.

R. Puchala, I. Prieto, V. Banskalieva, A. L. Goetsch, M. Lachica, and T. Sahlu. 2001. Effects of Bovine Somatotropin and Thyroid Hormone Status on Hormone Levels, Body Weight Gain, and Mohair Fiber Growth of Angora Goats. Journal of Animal Science 79:2913-2919.

Tentative Year 2002 Activities

In the year 2002, The E (Kika) de la Garza Institute for Goat Research will sponsor several extension/education activities. We start with a cheesemaking workshop which immediately precedes our annual Goat Field Day, which is always scheduled for the last Saturday in April. The 2002 Meat Buck Performance Test is cosponsored by the Oklahoma Meat Goat Association and has been designated by the ABGA Board of Directors as an ABGA Approved Performance Test. A mastitis workshop is scheduled for late May. Another cheesemaking workshop is scheduled in early August. In an effort to expand the walls of the University, this year we will again conduct two workshops away from campus. The Sustainable Internal Parasite Control workshops will be held on campus and in Atoka. The Artificial Insemination workshop will also be held on campus and in Tahlequah. Due to the hands-on nature of the Cheesemaking, Mastitis, Sustainable Internal Parasite Control and Artificial Insemination workshops the number of participants will be limited. Registration forms for individual workshops are available upon request. *Reserve your place today.*

If you are interested in receiving future information regarding these events, please check the appropriate box in the form below and return. ***In compliance with the ADA Act, participants with special needs can be reasonably accommodated by contacting Dr. Terry A. Gipson (405) 466-3836, at least five business days prior to the scheduled event.***

N.B. Dates are subject to change and workshops may be cancelled due to insufficient enrollment.

(Cut along line and mail form)

FORM TO REQUEST INFORMATION ABOUT FUTURE EVENTS

NAME: _____ **TELEPHONE:** _____

ADDRESS: _____

_____ **ZIP:** _____

Date	Activity	
April 26, 2002	Cheesemaking Workshop (Langston)	
April 27, 2002	GOAT FIELD DAY	
May 4, 2002	Meat Buck Performance Test	
May 25, 2002	Mastitis Workshop (Langston)	
June 15, 2002	Sustainable Internal Parasite Control for Small Ruminants (Langston)	
June 29, 2002	Sustainable Internal Parasite Control for Small Ruminants (Atoka)	
August 3, 2002	Cheesemaking Workshop (Langston)	
September 14, 2002	Demonstration Clinic: Artificial Insemination for Goats (Langston)	
October 5, 2002	Demonstration Clinic: Artificial Insemination for Goats (Tahlequah)	

Please mail this form to:

Agricultural Research
and Extension Program
Langston University
P.O. Box 730
Langston, OK 73050

ATTN: YEAR 2002 EVENTS

Noteworthy News

Dr. **Ignatius Nsahlai** returned to the University of Natal in South Africa in late January. While here on sabbatical for nearly 7 months, he worked on the Nutrient Requirement project, describing energy and metabolizable protein requirements of lactating goats based on a compiled database from goat feeding experiments conducted all over the world.

Dr. **Chuntian Zheng** recently joined us after spending a year for energy metabolism training in Denmark subsequent to completing his Ph.D. in China. Dr. **Zheng** will work on the project to assess energy requirements for maintenance and growth of young meat goats

Mr. **Getachew Animut** recently joined us and is working on his Ph.D. in our collaborative program with Oklahoma State University. Mr. **Animut** spent about 6 months here as the first Visiting Scholar from Alemaya University a couple of year ago. Mr. **Animut** will be working on the 'Cedar Foliage Training' experiment.

Working with Mr. Animut will be Dr. **Jamus Joseph**, a native of Sudan, and having just completed his Ph.D. at New Mexico State University. His primary responsibility will be the project 'Use of Goats for Vegetation Management in Grazing Lands'.

Drs. **Steve Hart**, **B. R. Min**, **Sergio Soto-Navarro**, **Kamal Soryal, Jun Luo**, **Ryszard Puchala**, and **Art Goetsch** each made one or more presentations at the annual meeting of the Southern Ag Workers and Southern Section of the American Society of Animal Science, as well as participating in symposia and discussion groups.

Mr. **Yoseph Mekasha** recently returned to Alemaya University in Ethiopia after completing his research project on feeding of broiler litter to growing meat goats.

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