Goat Newsletter

Cooperative Extension Program
Langston University

The Newsletter of the E (Kika) de la Garza American Institute for Goat Research *Summer 2004*

From the Director's Desk

Dr. Tilahun Sahlu

Our Annual Goat Field Day was great. Attendance keeps going up year after year, which makes us feel very proud that this event is serving its purpose well. That is, objectives of the 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. But, so as not to be too disappointing if you were unable to make it to the field day this year, the proceedings will soon be available on our website (www2.luresext.edu), there will be another one next year, and we have many other extension activities planned for this year. And while we are on the subject of the extension component of the program, the field day was almost immediately followed by the 2004 Meat Goat Performance Test with 58 young bucks from 16 different ranches enrolled this year. This is the largest number of bucks that have been enrolled and we have exceeded the capacity of our Calan feeders. We will be using our newly installed FIRE (Feed Intake Recording Equipment) feeders, in addition to our reliable Calan feeders for this year's buck test.

For research, of course we have many trials with samples being analyzed in the laboratory, articles being reviewed and written, and activities underway or being planned. In fact, a number of our research projects were addressed at the field day. For things going on right now, Dr. **Asefa Asmare** recently arrived from Alemaya University in eastern Ethiopia for a 6-month period to gain experience in research as a part of one of our international collaborative projects. Dr. Asmare initially is working with Drs. **Kevin Washburn** and **Lionel Dawson** of the Oklahoma State University School of Veterinary Medicine on a pilot study to further investigate a method of treating colostrum for the CAE virus as an alternative to heat.

Also pertaining to the dairy goats, Dr. **Steve Zeng** is carrying out two goat milk technology studies. One is looking at effects of extended storage and season on microbiological quality and composition of goat milk, and the other is addressing effects of vacuum-packaging and storage temperature on quality and shelf-life of soft cheese from goat milk.

Relevant to all components of our program, two new faculty have joined the Institute's staff, Dr. **Tera Auchtung** as Lactational Physiologist and Dr. **Zaisen Wang** as Caprine Production Scientist. We look forward to the exciting new aspects they bring to our program.

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

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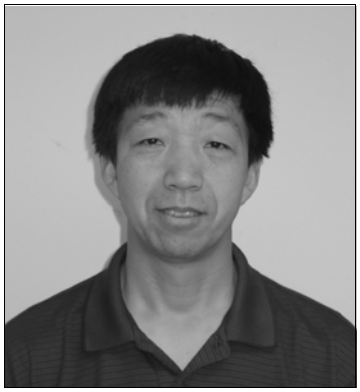
Meet the Faculty & Staff



Dr. Zaisen Wang

Dr. Zaisen Wang was born in northern China. He received his B.S. degree from Hebei Agricultural University in 1982 and M.S. degree in Animal Nutrition from the Graduate School of Chinese Academy of Agricultural Sciences in 1985.

From 1985 to 1989, Dr. Wang was hired as a Research Scientist by the Institute of Animal Sciences, Chinese Academy of Agricultural Sciences. He was involved actively in the "Mineral Nutrition Studies of Small Ruminants in Northern China", which focused on determining factors that limiting wool production and other performance of sheep.

Dr. Wang was awarded a postgraduate scholarship from Australian Center for International Agricultural Research in 1989 and entered a PhD program in the same year at the University of Western Australia. His research focused on the responses to high intakes of iron in sheep.

In 1994 to 1997, Dr. Wang came to the University of Arkansas, Fayetteville as a post-doctoral research associate and worked on a project entitled "Adding Value to Broiler Litter for Increased Consumption by Ruminants".

From the experience in animal nutrition research, Dr Wang realized the importance and urgency of application of molecular technologies in farm animal research. Hence he got an extensive training in that aspect by becoming involved in cancer chemo-prevention research. During 1998 to 2004, Dr. Zaisen Wang conducted post-doctoral programs at the AMC Cancer Research Center in Colorado and was most recently a researcher at the University of Colorado.

Dr. Wang joined the American Institute for Goat Research of Langston University as an Assistant Professor/Caprine Production Scientist in May 2004. He expects to apply new biotechnologies to get in depth information in the interrelationships among nutrition, immunology and internal parasitism in goat.

Dr. Zaisen Wang may be contact at (405)466-3836 or at zwang@luresesext.edu.

A view from Alemaya

by Asefa Asmare

The Alemaya University has established partnerships with a number of foreign institutes. The collaboration between the Alemaya University (AU) and Langston University (LU) is among the most important ones. The purposes of this institutional partnership are:

- to strengthen the Alemaya University, particularly the Department of Animal Sciences through human resource development and laboratory and library support;
- to contribute to the improvement of household food security of selected poor female farmers in the surrounding region of the AU; and
- to internationalize staff members of both institutes, so that they will better train students versed in local plus global agricultural conditions.

To achieve these objectives, many activities have been so far performed. Five staff members of the AU have spent from four to six months at LU and upgraded their research skills by carrying out joint research projects with reputed scientists of the Institute. They received short training in statistics. They were introduced to modern laboratory equipment and techniques of chemical analyses. The staff had exposure to up-to-date books, journals, Internet and other related facilities, which are not available back home to the level required. Using these materials, some of the staff members have either developed new teaching materials or upgraded previously prepared lessons. They also had opportunities to attend research and extension field days and exchange experiences with scientists and farmers in their fields of endeavor. Participation in this partnership by one of AU's staff members led to a doctoral scholarship. This person has been conducting his Ph.D. training at Oklahoma State University since 2002.

The other relevant element of the human resource development activities of the partnership has been the visits of senior staff of LU to the AU. A number of LU staff have traveled to the AU and trained the junior staff in areas such as Statistics, Manuscript writing and reviewing, and parasitology. They have also exchanged experiences with AU senior staff members and have become acquainted with Ethiopian culture and customs.

Dr. Terry Gipson from LU teaching a computer statistics package.

In addition, the project has committed substantial amount of money to supply the AU library with up-to-date books in the area of animal sciences and contributed to the strengthening of the Animal Nutrition laboratory by providing laboratory equipment and chemicals, which are not available in the local market. All of these trainings, exchanges and library and laboratory support have greatly contributed to the improvement of teaching, research and extension competencies of the AU staff, particularly the staff of the Department of Animal Sciences.

Needy female farmers have been the other fundamental focus of the partnership project. This project has trained so far 200 low-income female farmers on how to manage goats. Following the training, each woman was provided with goats. There is a plan to train an additional 100 needy female farmers and offer them goats in May 2004. After the goats reproduce, each female farmer will repay one breeding goat to the project, which will be further given to another

needy female farmer. This arrangement contributes to the long-term sustainability of the program. This project has become very popular with female farmers. It has allowed them to alleviate protein hunger of their children by feeding them goat milk and through fattening and sale of goats has generated additional income. This income has been used to pay school fees for their children, to buy additional food for the family, and to improve or construct homes. Another positive implication of this program on the farmers' economy has been the introduction of genetically improved goat breeds into the livestock population of the region.

The partnership project between Alemaya University and Langston University has successfully met its purpose. Its devoted contributions to the growth and development of Alemaya University, particularly the Department of Animal Sciences, and to the improvement of the livelihood of the selected poor female farmers in the region around the AU are highly appreciated.

Dr. Asefa Asmare is the Dean of Alemaya University's College of Agriculture and holds a Doctor of Veterinary Medicine degree. He will be at Langston University for six months conducting collaborative research. For information regarding the developmental project with Alemaya University, contact Dr. Roger Merkel at (405)466-3836 or at rmerkel@luresesext.edu.

(Ed. Note: Alemaya University is located in Eastern Ethiopia, between Dire Dawa and Harrar)

A member of the women's group proudly displays her goats

Another member of the women's group with her goats.

Research Spotlight

Abstracted by A. Goetsch

Utilizing Sericea Lespedeza.

Sericea lespedeza is a perennial summer legume now found throughout Oklahoma and in neighboring states. Although sericea lespedeza is a legume and can grow in less fertile soils than other legumes, it is viewed as problematic in many areas due to its spread into pastures and the aversion shown it by grazing cattle. Sericea lespedeza contains condensed tannins that can affect digestibility and(or) feed intake and are the likely cause of low consumption by cattle, which limits its usefulness as a forage for beef cattle. However, goats readily consume the plant, but negative effects of tannins on digestibility or intake could remain. In this regard, polyethylene glycol (PEG) binds condensed tannins and may prevent their adverse effects when tannin levels are high. In addition, common management practices used in rearing goats entail the use of pastures in the early post-weaning phase of growth and possibly later. However, as demand for goat meat increases, the use of high-concentrate diets may become more prevalent. Diets fed in the early post-weaning growth phase affect growth rates in subsequent finishing phases in cattle and sheep, but this has not been extensively studied with goats. Therefore, a study was conducted to compare the growth rate of kids grazing sericea lespedeza-dominated pastures in the early post-weaning phase with or without PEG supplementation to that of kids receiving a concentrate diet, and to investigate the effects of early post-weaning growth rate on subsequent performance. 48 Boer ´ Spanish doelings (4 months of age, 21 kg body weight (BW)) were used. Treatments were: Barn, with goats kept in individual pens for the 24-week trial and fed a 70% concentrate diet (17% crude protein, 69% total digestible nutrients) free-choice, C, and PS. In the first 6 weeks (Phase 1), C and PS groups grazed lespedeza pastures and were supplemented with 88 g/day per animal of concentrate without (C) or with (PS) an additional 25 g/day per animal of PEG. Because of limited rainfall in Phase 1 and the resultant low availability of growing forage, in Phase 2 (6 weeks) treatments were changed in a manner thought to increase differences in BW and average daily gain (ADG) between C and PS that developed in Phase 1. In Phase 2, C groups resided in pastures dominated by crabgrass, whereas PS groups grazed two previously ungrazed lespedeza pastures and were supplemented with 1.5% BW of the Barn diet. In Phase 3, the final 12 weeks, all doelings consumed the Barn diet free-choice in confinement. Phase 1 ADG ranked Barn > PS > C (154, 95, and 47 g/day, respectively). ADG in Phase 2 (70, 55, and 57 g/day), Phase 3 (77, 82, and 72 g/day), and the whole trial (94, 78, and 62 g/day for Barn, PS, and C, respectively) were similar among treatments. In conclusion, PEG supplementation of Boer × Spanish doelings grazing condensed tanning-containing sericea lespedeza-dominated pastures resulted in a doubling of ADG compared with doelings not receiving PEG in a 6-week grazing period. Hence, PEG supplementation could be a valuable tool in the management of meat goats grazing tannin-containing forage to increase growth rate. However, future studies should entail longer periods of evaluation. Differences in ADG in the early post-weaning period did not affect ADG later with the feeding of a concentrate-based diet relative to continuous concentrate consumption, perhaps because ADG in the limiting nutritional plane phase was moderate and(or) periods of low and high nutritional planes were not consecutive.

Merkel, R. C., A. L. Goetsch, and N. Silanikove. 2003. Effects of supplementing polyethylene glycol to goat kids grazing sericea lespedeza and early post-weaning nutritive plane upon subsequent growth. Sheep and Goat Research Journal 18:8-13.

Goat Kid in the Classroom

by S. Stevenson

More than 150 youth in grades Pre-K thru 3rd at Coyle Public Schools participated in a Langston University 4-H Youth Development program called "Kid in the Classroom". This program was designed to spark interest in 4-H Youth Development, as well as to introduce youth to animal science. Youth were given a brief history of goats and participated in different activities, which included petting newborn kids. They also sampled the following products: (three types of goat cheese, goat stick and goat ice cream).

Ms. Stevenson introduces human kids to a goat kid.

This program is currently conducted in nine counties in Eastern Oklahoma by Langston University Extension Specialist, Ms. Candice Howell and will be conducted in Logan and surrounding counties this school year by LU Extension Educator, Ms. Sheila Stevenson.

Goat education for youth was one of many highlights during our annual Goat Field Day held last month on the campus of Langston University. The "4-H Fun Tent" included instruction in roping, horseback riding, Shetland pony rides, fishing, card making, GEO boards and Pot Your Own Plant (PYOP). Fifty one (51) youth participated in the activities and over 25 volunteers provided services. Volunteers included: LU Collegiate Club, LU SIFE Club, LU Rodeo Team, City of Langston Chamber of Commerce, LU Center for Biotechnological Research & Education (CBRE), Langston University Police Department, City of Langston Fire Department, LU Agriculture Club, The Oklahoma Department of Wildlife Conservation, and Guthrie Police Department.

The LU State Program Leader for 4-H Youth Development, Mrs. Dorothy Wilson believes that the earlier we educate our youth in Agricultural Sciences, including biotechnology, horticulture, animal science, and other 4-H Youth Development programs, the better prepared our youth are for a bright and successful future.

Goat dairy products workshops are available on-site (upon request) for older youth grades 9-12, teachers and any other interested adults. Dr. Steve Zeng will provide instruction in cheesemaking. Additionally, youth goat fitting and showing workshops will be available this Fall. Dr. Terry Gipson will provide instruction.

For more information on Goat Kid in the Classroom, contact Ms. Sheila Stevenson at 405-466-3836.

Youth participants enjoyed the Goat Field Day.

Artificial Insemination Workshops

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

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

1. *Langston University on Saturday, September 11, 2004,*
2. *Langston University on Saturday, September 25, 2004, and*
3. *Cherokee County Fairgrounds in Tahlequah, OK on Saturday, October 9, 2004.*

All three 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 and the registration fee is $30 per person. Included in the cost of registration are handouts and lunch.

For information regarding the AI workshops, contact Dr. Terry Gipson at (405)466-3836 or tgipson@luresext.edu. Registration forms are available online at http://www2.luresext.edu/goats/extension/workshops_field_day.htm

Mark Mouttet (center with blue cap), Tahlequah workshop instructor, assists with hands-on insemination.

Les Hutchens (kneeling), Langston workshop instructor, demonstrates proper semen handling techniques.

Noteworthy News

Dr. **Roger Merkel** and Teresa and Don Wade of Biogenics, LTD recently conducted training workshops in reproductive technologies for faculty members at Alemaya University and at Debub University in Ethiopia.

Dr. **Steve Hart** gave presentations on goat nutrition at conferences in Arkansas.

Drs. **Marvin Burns**, **Tilahun Sahlu**, **Roger Merkel**, **Arthur Goetsch**, and **Terry Gipson** received delegates of the Iraqi Higher Education Administers Exchange. Dr. **Merkel** gave an overview of the goat research, extension, and international programs. The Exchange was part of the Oklahoma Higher Education Partnership led by the University of Oklahoma with Oklahoma State University, Langston University and Cameron University to revitalize the higher education system in Iraq. Langston's role focuses on small ruminant research and updating the skills of Iraqi scientists in research and laboratory methodologies.

Dr. **Steve Zeng** conducted two cheesemaking workshops in Archie and Harrisonville, Missouri in May.

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