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 *Summer 2000*

From the Director's Desk

Dr. Tilahun Sahlu

Now that we are into the summer, kidding is over and some goats are already weaned. Thus, this is a time of ending and beginning a number of experiments. Mr. **Glenn Detweiler** and Dr. **Art Goetsch** recently completed their study with different milk feeding schemes to hasten the transition to dry feed and improve growth early after weaning. Also, Messrs. **Jerry Hayes**, Detweiler, and Dr. Goetsch have a trial underway with different creep feeding treatments for Spanish does and Boer × Spanish kids.

Dr. **B. R. Min** has joined the Institute as a Visiting Scholar working with Dr. **Steve Hart** on research involving grazing-based dairy goat production systems compared with a confinement system. The spring/summer breeding of Spanish goats for the out-of-season breeding study of Drs. **Tumen Wuliji** and **Lionel Dawson** is now complete.

Dr. Dawson, Mr. Detweiler, and Dr. **Terry Gipson** are beginning a study with a plant from Ethiopia that possibly possesses anthelmintic properties. The plant investigated last year had significant effect on tapeworms, and we are hoping that this new plant will be effective against roundworms.

Drs. Wuliji, Goetsch and **Ryszard Puchala**, have nearly finished the compensatory growth/body and carcass composition experiment with summer/fall-born Spanish kids from last year. Dr. **Roger Merkel** has the second phase of an experiment underway looking at sites of action of polyethylene glycol with condensed tannin-containing diets.

Our annual Goat Field Day took place the last weekend in April. The theme was "Goats in the Twenty-First Century" and more than 145 participants listened intently as Mr. Vincent Maefsky of Poplar Hill Dairy Goat Farm in Scandia, MN discussed his involvement in the dairy goat industry; as Mr. Marvin Shurley, the president of the American Meat Goat Association and a meat goat producer from Sonora, TX discussed the meat goat industry; and Dr. Donald Huss of the Texas Cashmere Association and a cashmere producer from Menard, TX discussed the cashmere industry.

Mr. **Tim McKinney** and Dr. Gipson traveled to Texas A&M University to undergo further training in DHIA procedures. The Langston DHI laboratory continues to grow with 19 new herds enrolling so far this year. In early May, we started our buck performance test for the year 2000 with 34 Boer bucks enrolled.

In early June, Drs. Dawson and Gipson conducted a hands-on workshop on controlling internal parasites for small ruminant producers.

The highlight of this quarter was attending the 7th International Conference on Goats in France. Read more about it in this newsletter.

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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Meet the Faculty & Staff

Dr. Tilahun Sahlu

Dr. Tilahun Sahlu was born in Ethiopia in 1950. He received a B.S. in Animal Science in 1973 from Alemaya College of Agriculture under Haile Selasse I University in Ethiopia. Dr. Sahlu worked as Assistant Lecturer at the Debreziet Agricultural Experiment Station of Haile Selasse I University in Ethiopia from 1973 to 1978, primarily in dairy cattle crossbreeding and feed evaluation research.

He was a Research/Teaching Assistant at South Dakota State University from 1978 to 1983 and received his M.S. and Ph.D. degrees in 1980 and 1983, respectively. He conducted research evaluating feedstuff for lactating dairy cattle.

From 1983 to 1985, Dr. Sahlu was a Postdoctoral Research Associate in a cooperative program involving the University of California-Davis and USDA-ARS Meat Animal Research Center in Clay Center, Nebraska.

Dr. Sahlu was a Research Specialist with the International Dairy Goat Research Center of Prairie View A&M University in Prairie View, Texas from 1985 to 1986.

Dr. Sahlu began his tenure at the E (Kika) de la Garza Institute for Goat Research of Langston University in 1986 as an Assistant Research Professor. In 1991 he was promoted to Associate Research Professor and assumed the responsibilities of Research Leader. Dr. Sahlu was promoted to Research Professor in 1994, and in 1998 became Director of the Institute.

Dr. Sahlu's research program has been broad, encompassing areas such as nutrient requirements of dairy, meat, and fiber-producing goats, regulation and control of fiber growth, and energy expenditure by goats during grazing, and application of fundamental research approaches to solve production problems and constraints.

Dr. Sahlu has had a strong emphasis on activities in developing areas of the world to improve livestock productivity for enhanced food security. This has occurred via invited presentations on goat research and production throughout the world, collaborative research/extension projects with international institutions, and direction of graduate, postdoctoral, and sabbatical research programs of a large number of international visitors.

Dr. Sahlu has been very active in the International Goat Association, and has served on the Editorial Board and is currently Associate Editor for Nutrition for the international scientific journal Small Ruminant Research.

Dr. Tilahun Sahlu can be reached at (405) 466-3836 or at sahlu@luresext.edu.

7th International Conference on Goats

Drs. Terry Gipson, Steve Hart, Ryszard Puchala and Tilahun Sahlu joined more than 800 participates from 77 different countries at the 7th International Conference on Goats (ICG) to discuss research and technologies pertaining to goat production. The 7th ICG took place in Tours, France, which is located in the heart of the French dairy goat industry, from May 15 to 18, 2000.

Dr. Tilahun Sahlu greets Dr. Pierre Morand-Fehr, president of the International Goat Association.

Each morning, the conference opened with a plenary session. These sessions ranged from sustainable development to transgenics. The plenary session was followed by concurrent sessions on nutrition, genetics, pathology, economics, etc. Each afternoon, participants had the opportunity to discuss poster presentations with the authors and then to attend a roundtable discussion. These roundtable discussions ranged from prevention and detection of mastitis to organization of goat research to contribution of women to goat production.

Dr. Ryszard Puchala at his poster

Dr. Steve Hart at his poster.

Dr. Sahlu presented an invited paper on *The American Goat Situation* and also chaired the concurrent session on Nutrition and Feeding Strategies. Dr. Gipson presented a poster on *Performance test for growth rate and feed efficiency in young meat bucks*. Dr. Hart presented a poster on *Effect of sex and initial body weight on stocker goat performance*. Dr. Puchala presented posters on *Effect of ruminally protected choline and betaine on productivity of Angora doelings* and on *Effects of Igf-I administered to perfused area of the skin in Angora goats*. Dr. Art Goetsch, who was unable to make the trip, had a poster on *Dairy goat performance with different dietary concentrate levels in late lactation and the dry period*.

A highlight of the conference was a series of technical symposia and visits at the end of the conference. Conference participants were able to visit several research stations, dairy processing plants, and dairy goat farms. Being able to visit the farms and talk to producers was a great treat for the participants and it was in the symposia that the French goat industry was detailed (see profile of the French goat industry).

Alpine and Saanen goats at a typical French goat farm.

PROFILE OF THE FRENCH GOAT INDUSTRY

France has 11% of the goats in Europe and ranks fourth behind Greece, Spain and Italy. There are 922,000 goats in France with the vast majority being dairy breeds. Alpine and Saanen are the two most popular breeds and account for nearly 90% of all the dairy goats in France. Production parameters for these two breeds are in Table 1.

Table 1. Production parameters for Alpine and Saanen goats in France.

	Alpine	Saanen
Number of goats	450,000	350,000
Number of goat enrolled in the French national milk-recording scheme	148,335	124,655
Lactation length (days)	273	277
Milk yield (lbs.)	1665	1731
Fat percent (%)	3.53	3.30
Protein percent (%)	3.36	3.25

The dairy goat industry is located in the west-central part of France. The regions of Poitou-Charentes and Centre (the city of Tours, which hosted the 7th ICG, is located in Centre) have 49% of the dairy goats in France. The region of Poitou-Charentes is the heart of the dairy goat industry with 51% of the milk produced, 34% of the dairy goats, and 22% of the producers. There are more than 10,000 dairy goat herds in France with an average herd size of 72 goats. In Poitou-Charentes, there are 2,300 dairy goat herds with an average of 115 goats.

Two national organizations, Capri-AI and Caprigene, work cooperatively for the genetic improvement of dairy goats under the French national breeding program. Capri-AI is a national semen collection and processing center, located near the city of Poitiers in the region of Poitou-Charentes. Capri-AI houses 360 Alpine and Saanen bucks annually. After a premier selection on-station, only 120 bucks are chosen for semen collection and are used in a progeny test. Only the 35 best bucks from the progeny test are selected as AI bucks. Caprigene, located in the same facilities as Capri-AI, is responsible for the network of 1000 breeders and 150,000 goats used in the progeny-testing scheme.

Over half (58%) of the producers make farmstead cheese and the remainder sell their milk to cooperative dairy processors. However, the production of farmstead cheese uses only 41% of the milk produced and the majority of milk goes to commercial processing.

The French dairy goat industry produces 727 million pounds of milk annually, which is made into 55,000 tons of goat cheese. The increase in cheese production has risen 35% over the last ten years. Only about 10% of the goat cheese is exported, primarily to Germany, Belgium and the United Kingdom, and the rest is for domestic consumption. 75% of French households consume goat cheese with an annual consumption of 4.4 pounds per household. Average retail price of goat cheese is $4.50/pound. The French public's demand for goat cheese continues to increase. In fact, the consumption of goat cheese is increasing more rapidly than that of cow cheese.

Travels in Ethiopia

by R. Merkel

In April 2000, Dr. Roger Merkel traveled to Ethiopia to visit Awassa College of Agriculture (presently Debub University) and Alemaya University of Agriculture. This visit was part of the ongoing partnership programs with these two institutions. These programs provide for collaborative research, scientific training and a development project establishing women's groups for goat production in the surrounding regions. During his visit, Dr. Merkel received updates on the research to be done at both Awassa and Alemaya. Scientists at Awassa will investigate the value of using pods and leaves of legume trees as goat feedstuffs. Tree leaves are an important dietary component of goats in Ethiopia, especially during the dry season. Alemaya scientists are planning trials to study the use of sweet potato leaves as a supplement. Sweet potatoes are an important human food crop in the region and this research will investigate the effect of time of defoliation of sweet potato vines for use as animal feed upon subsequent tuber yield.

Dr. Merkel also visited the women's groups for goat production. Women near Awassa had received their goats in September/October of 1999. The goats were in excellent condition, attesting to their importance in the farming system and an indicator of the pride these women had in their animals. Problems experienced by farmers were a lack of rain for the grasses and tree legumes provided to them and also some unexplained abortions in the goats in one village. At Alemaya, Dr. Merkel saw one of the training sessions for women participants held at the university goat barns. He also visited some of the selected women in their village and learned about their livestock rearing methods and available feed resources.

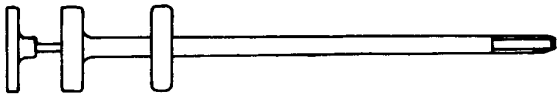
Yuwo Nene, an Awassa participant, proudly displays her "repayment" to the project.

For information regarding the Ethiopia projects, contact Dr. Roger Merkel at (405)466-3836 or rmerkel@luresext.edu

Artificial Insemination Workshops

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

The first will be at Langston University on Saturday, September 9, 2000 and the second will be at the Cherokee County Fairgrounds in Tahlequah, OK on Saturday, September 30, 2000. Both workshops will present basic anatomy and physiology of goats, estrus detection and synchronization in goats, and semen handling. Participants will have opportunity to practice with fresh reproductive tracts and with live animals.



Are you proficient with one of these? If not, you will want to attend our artificial insemination workshops.

For information regarding the AI workshops, contact Dr. - Terry Gipson at (405)466-3836 or tgipson@luresext.edu.

Goat Management Tips

Weaning Management *by S. Hart.*

It has been a warm, wet spring in most of Oklahoma, ideal weather for internal parasites. Goats should be watched for signs of parasitism such as, weight loss, rough hair coat, diarrhea, and anemia. Anemia is a condition in which the blood is deficient in red blood cells *(Webster's Dictionary)*. Anemic animals are usually pale in color, especially in the lower eyelid or the gums. The normal color is light pink to pink whereas the color whitens as anemia becomes worse. Lactating does and kids are most susceptible to internal parasites although all animals can be affected. The best way to determine the level of parasitism in your goat herds is by a fecal egg count. This requires a fresh fecal sample from several animals in your herd. Langston just recently held an internal parasite workshop to teach producers to do their own fecal egg counts and how to manage animals to reduce problems with internal parasites. In some areas, internal parasites are becoming resistant to dewormers that have been used for several years. There are some newer dewormers that will work when the old dewormers don't. It should be no surprise that these dewormers are not registered for use in goats and you must work with a veterinarian to determine the correct dosage and withdrawal times for use of these drugs. The resistance problem makes management even more important for controlling worms. Pastures can be rested or rotated to keep animals from picking up worms. This is especially important after deworming. Animals should be moved to a clean pasture (no goats for months) after deworming to reduce reinfection. Co-species grazing with cattle or horses will help because horse or cow parasites are usually not viable in goats and vice versa. Avoid forcing animals to graze down within 4 inches of the ground. Good nutrition enables animals to use their immune system to fight internal parasites. Stress, whether nutritional or shipping makes goats susceptible to parasites.

Many of you will be weaning your kids in the coming months. With weaning comes the need for vaccination and the threat of coccidiosis. Kids need to be vaccinated before weaning against overeating and tetanus. Kids should be vaccinated at 6-8 weeks of age and boostered 3-4 weeks later according to the directions on the label of the vaccine.

A common health problem at weaning is coccidiosis, which is a type of internal parasite that is normally present in the environment and kept under control by the animal's immune system. However, when the animal's body is stressed such as weaning, the parasite invades the lining of the intestine causing diarrhea. In goats, the diarrhea is usually not bloody. The animal is often off-feed, loses weight, weak, listless and has a dull appearance. Some animals may appear slightly bloated and exhibit abdominal pain. Warm, wet and crowded conditions also increase the number of coccidia that are in the environment and the chance of infection. This may happen when weaned animals stay crowded around wet areas such as the water trough. There are several commercial medicated feeds to prevent coccidiosis that can be fed as a creep feed before weaning that have coccidiostats in them such as De-cox, Cocciban, Coccicurb Rumensin and Bovatec. The feed should be fed three weeks preweaning to four or more weeks after weaning. While prevention with these medicines is usually effective, under stressful conditions, it is still possible for animals to get coccidiosis. Albon (sulfadimethoxine) can be used for treatment of coccidia. For prevention or treatment, Corid (amprolium) can be put in the drinking water. Oral Sulmet (sulfamethazine) has been used to treat coccidiosis successfully for many years, but coccidia in some areas are becoming resistant to it. The goats can become dehydrated if the diarrhea lasts very long and the animals may need to be treated with electrolytes. These drugs should be given as per instructions on the label or as per instructions of your veterinarian, especially since almost none are approved in goats and different levels are sometimes used in goats than for other species listed on the label.

For more information regarding goat management, contact Dr. Steve Hart at (405) 466-3836 or at shart@luresext.edu

Research Spotlight

Abstracted by A. Goetsch

Mohair & Milk in Angoras.

Angora goats are valued primarily for mohair production, but income also arises from the sale of kids. Thus, there is need for both high milk production to promote maximal kid live weight gain and an ample supply of nutrients to skin for rapid mohair growth. However, mohair growth is markedly decreased in lactation. Angora goats are the highest fleece-producing ruminant on a body weight basis; therefore, there also may be a negative relationship between milk production and fiber growth in Angora goats, although one has yet to be reported. The primary objective of this study was to measure the relationship between, and dietary crude protein level effects on, milk production and mohair growth by Angora does in different periods of lactation. Based on results of this experiment, milk production by Angora does in week 3 through 16 of lactation increased linearly with increasing crude protein level in a diet with a high concentrate level. Crude protein intake was correlated with milk production but not with live weight gain or mohair growth. Milk production and mohair growth were negatively related in mid-lactation but not in early or late stages, but dietary crude protein level did not alter the relationship between milk production and mohair growth. Under our conditions, varying the dietary crude protein level did not overcome effects of partitioning of nutrients to milk synthesis in lactating Angora does or increase mohair growth by increasing skin nutrient supply.

T. Sahlu, H. Carneiro, H. M. El Shaer, J. M. Fernandez, S. P. Hart, and A. L. Goetsch. 1999. Dietary protein effects on and the relationship between milk production and mohair growth in Angora does. Small Ruminant Research 33:25-36.

Boer Crossbreds.

Contributions of heterosis for economically important traits have been well documented in livestock. The Boer goat has long been recognized for its superior meat producing ability and is widely used to improve growth and carcass traits of local breeds through crossbreeding. Milking ability of the dam can greatly influence the opportunity of kids to express growth potential; therefore, hand-rearing eliminates such maternal effects. However, information is lacking on how performance of Boer crosses compares with Spanish goat kid performance during the preweaning period under identical feeding and management conditions, such as with feeding of milk replacer. Acidified milk replacer has been widely used in rearing young calves and kids, with advantages of reducing milk feeding and labor costs and simplifying management. Kids fed cow milk replacer can grow as rapidly as kids given goat or cow milk. Therefore, the objective of this study was to compare preweaning performance of two Boer crossbreds and Spanish goats under standardized nutritional conditions - feeding acidified milk replacer in an intensive management system. Boer × Angora kids consumed more milk replacer from birth to 3 weeks of age than did Boer × Spanish and Spanish kids, although intake was similar among genotypes in weeks 3 to 8. Starter diet intake was greatest among genotypes for Boer × Spanish, and the feed conversion ratio was 13% greater for Boer cross kids than for Spanish kids. This study reflects that Boer crosses exhibit superior growth and feed efficiency during the preweaning period compared with Spanish kids under intensive management conditions.

J. Luo, T. Sahlu, M. Cameron, and A. L. Goetsch. 2000. Growth of Spanish, Boer × Angora and Boer × Spanish goat kids fed milk replacer. Small Ruminant Research. 36:189-194.

Noteworthy News

Dr. **Tilahun Sahlu** received the R.D. Morrison and F.E. Evans Outstanding Scientist Award for meritorious achievement in research at the Twelfth Biennial Research Symposium of the Association of Research Directors in Washington, D.C. Dr. **Sahlu** was also recognized for promoting goats for the benefit of the world's people at the 7th International Conference on Goats at Tours, France.

Drs. **Terry Gipson**, **Steve Hart**, **Tilahun Sahlu**, **Tumen Wuliji** and Mr. **Tshesome Shenkoru** traveled to Washington, D.C. to present research findings at the Twelfth Biennial Research Symposium of the Association of Research Directors. Titles of presentations were "*Effect of ruminally protected betaine on the productivity of Angora goats*", "*Factors affecting sale price of performance-tested meat bucks*", "*Effect of dietary protein level on performance of weaned Boer crossbred and Spanish wethers*", "*Dairy goat performance with different dietary concentrate levels in late lactation and the dry period*", "*Sericia lespedeza for grazing goats*", "*Enhancing goat production and extension in Ethiopia*", "*Effect of PEG supplementation of goats grazing shinnery oak pastures in western Oklahoma*", *Manipulation for out of season breeding in Spanish goats*", "*Effect of growth hormone and IGF-I on fiber growth in Angora goats*", "*Effect of triiodothyronine administered to a perfused area of skin in Angora goats*".

Drs. **Terry Gipson**, **Steve Hart**, **Ryszard Puchala** and **Tilahun Sahlu** presented research findings at the 7th International Conference on Goats in Tours, France. Dr. Sahlu gave an invited paper on an overview of the North American goat situation.

Dr. **Roger Merkel** traveled to Ethiopia to evaluate progress on two cooperative research projects. Dr. Merkel visited Awassa College of Agriculture and Alemaya University of Agriculture.

Dr. **R.B. Min** joined the Institute as a Visiting Scholar after recently completing his doctorate at Massey University, New Zealand. Dr. Min is working with Dr. **Steve Hart** on a project entitled "Sustainable dairy goat milk production from pasture".

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