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 *Winter 2000*

From the Director's Desk

Dr. Tilahun Sahlu

With the long period of little or no rain in the summer, it is difficult to plan upcoming activities for winter. Nonetheless, careful planning is essential for successful research and extension programs. An essential part of the planning process is outlining and evaluating laboratory analyses. Lab work at the Institute is conducted by two general entities. First, we have a group of hard-working individuals headed by Mr. **Kesete Tesfai** who are part of the Central Laboratory. The Central Lab conducts many of the large array of different analyses. Secondly, because the number of people working in the Central Lab is simply not adequate for the large number of samples coming in from the numerous experiments and the Institute has an important training function, considerable laboratory analyses are performed by graduate students, postdoctoral research associates, visiting scientists, and faculty. Of course, we also work with part-time undergraduate students both in the lab and at the farm. It should be mentioned that there is an immense amount of lab work in progress on experiments primarily conducted within the last year, which have been highlighted in previous newsletters.

The does bred in the spring of Drs. **Tumen Wuliji** and **Lionel Dawson** have kidded, and the young are growing quite well. We plan to use these fall-born kids in one or two grazing experiments in 2001.

Experiments being conducted by Mr. **Mengistu Urge** and Dr. **Roger Merkel**, which pertain to compensatory growth of four goat breeds, are going well. Drs. **Tegene Negesse**, **Roger Merkel**, and **Adugna Tolera** have an experiment going with Spanish or Boer × Spanish doelings, looking at potential for use of relatively high dietary levels of broiler litter in growing/finishing diets.

Dr. **Sergio Soto-Navarro** has initiated his second experiment in the second battery of trials focusing on amino acid requirements and different protein sources for fast growth of Boer crossbreds. This trial entails measuring growth of Spanish and Boer × Spanish wethers consuming diets with different dietary levels of the amino acids lysine and methionine.

In early October Ms. **Rowena Joemat** and Dr. **Tumen Wuliji** traveled to the Texas Agricultural Experiment Station in San Angelo. They worked with Dr. Christopher Lupton to measure staple strength for their respective experiments.

Messrs. **Glenn Detweiler** and **Jerry Hayes** along with others at the farm have nearly completed preparing an area of a facility for the new calorimetry equipment soon to be installed, and plans for establishing a new set of small pastures for the grazing project are moving along well.

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Meet the Faculty & Staff

Dr. Terry A. Gipson

Dr. Terry A. Gipson was born into a farming family in southeast Missouri. In high school, Dr. Gipson was active in FFA and attained the rank of State Farmer. He also showed FFA steers.

Dr. Gipson earned his B.S. in Agriculture from the University of Missouri in 1978. From 1978 through 1981, Dr. Gipson served in the U.S. Peace Corps, first as a teacher at a veterinary technical school in northeastern Zaire and later as a regional representative in southeastern Zaire. Following his Peace Corps experience, Dr. Gipson entered graduate school, earning a M.S. from the University of Missouri in 1984 and a Ph.D. from the University of Illinois in 1989, both in the area of Animal Science. Dr. Gipson's doctoral thesis subject was lactation curves in dairy goats and factors that affect the curves.

Dr. Gipson, along with his family, then returned to Africa as an agricultural missionary with the Evangelical Lutheran Church in America in Senegal, West Africa from 1989 to 1991.

Upon his return to the U.S., Dr. Gipson entered a Research Associate Post-doctoral position at Langston University from 1991 through 1993. At GIGR, he was involved in a breeding program for year-round cashmere production.

Dr. Gipson, in 1993, joined Virginia State University as an Assistant Professor in the Meat Goat Program. At VSU, Dr. Gipson held a split appointment in research and extension. His research emphasis while at VSU included the evaluation of an accelerated kidding system and parasite-resistance in several goat breeds.

In 1998, Dr. Gipson returned to Langston University as an Associate Research Professor. Dr. Gipson is the Interim Goat Extension Leader and coordinates the outreach program for the goat program. His responsibilities include coordinator of the annual Goat Field Day, editor of the newsletter, organizer of the annual producer workshops, and supervisor of the meat buck performance test. He also teaches an introductory animal science course.

Dr. Gipson has published several articles concerning goat breeding, production and parasitism in goats. He has also given numerous extension presentations.

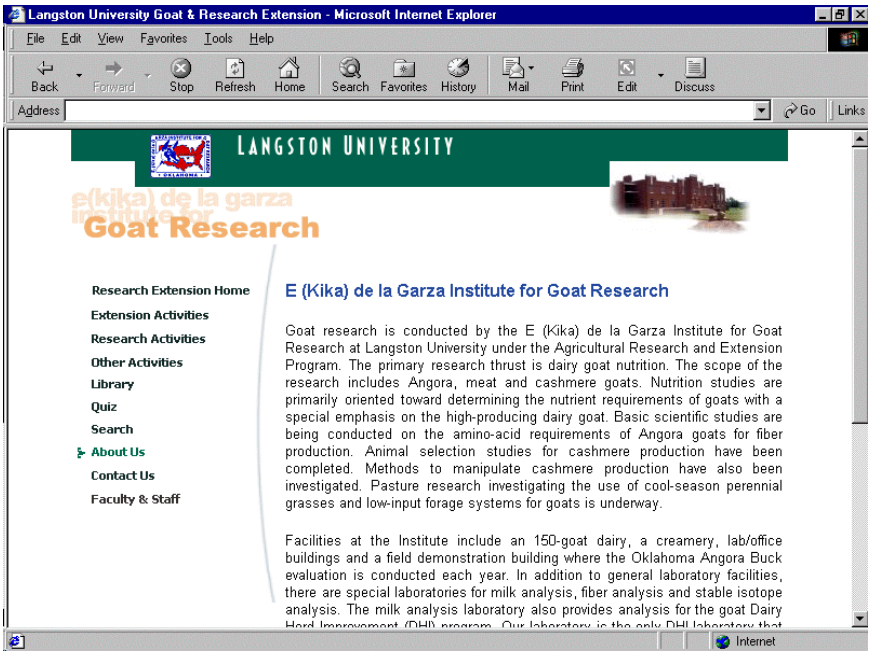
In his spare time, Dr. Gipson enjoys spending time with his wife, their three children and two dogs. He also enjoys nature, especially bird-watching, and volunteering for various activities at their church.

Dr. Terry A. Gipson can be reached at (405) 466-3836 or at tgipson@luresext.edu.

New & Improved Web Site

by T. Gipson

The Agricultural Research and Cooperative Extension program of Langston University recently unveiled a new and improved Internet web site. The Internet address (URL) of the new web site is http://www2.luresext.edu.



Capabilities of the new web site include a document library with the complete proceedings of the annual Goat Field Day for the past three years and the quarterly newsletter for the past two years. Both the proceedings and newsletters are also available in *portable document format* (pdf), which allows for the viewing and printing of documents across platform and printer without loss of formatting.

Information, recent abstracts and scientific articles of completed and current research activities in dairy, fiber and meat production are available for online viewing and reading.

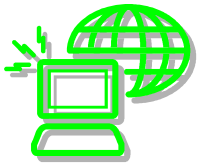
Visitors will be able to take a Virtual Tour of the research farm and laboratories, complete with digital photos and narrative. Visitors will also be able to browse a digital Photo Album. Contents of the Photo Album include photos of the 2000 Field Day, Dr. Roger Merkel's recent trip to Ethiopia, the recent conference on the Opportunities and Challenges of Enhancing Goat Production in East Africa, and the 7th International Conference on Goats held in Tours, France earlier this year.

Visitors will also be able to subscribe to our free quarterly newsletter online.

Visitors will be able to test their knowledge of goats with the interactive goat quiz which covers nearly all aspects of dairy, fiber and meat goat production. For those questions that are lacking in the interactive quiz database, visitors will be able to submit a question to be included in the database.

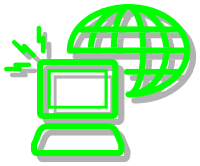
Visitors will be able to read about research interests of faculty and will be able to contact faculty & staff via email.

For information regarding the web site, contact Dr. Terry Gipson at (405)466-3836 or at tgipson@luresesext.edu.



Langston's new Internet web site

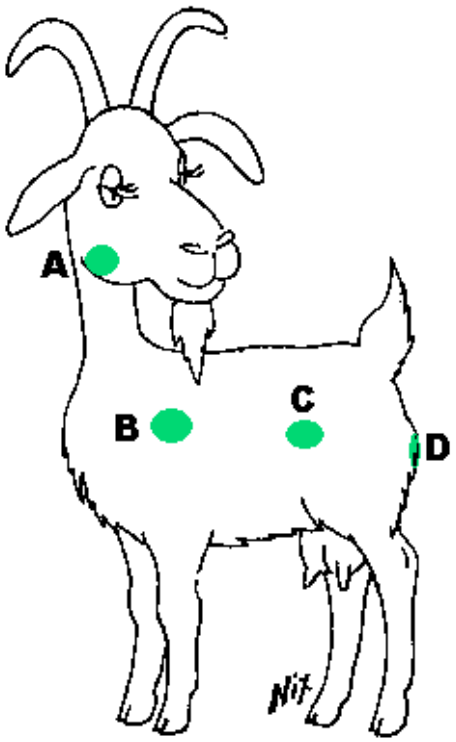
http://www2.luresext.edu



Goat Management Tips - Diseases

Caseous Lymphadenitis *by Lionel Dawson, D.V.M.*

Caseous Lymphadenitis (CL) is a chronic contagious disease affecting mainly sheep and goats. This disease is also called pseudobulerculosis or often "abscesses," and has been referred to as the curse of the goat industry throughout the world.

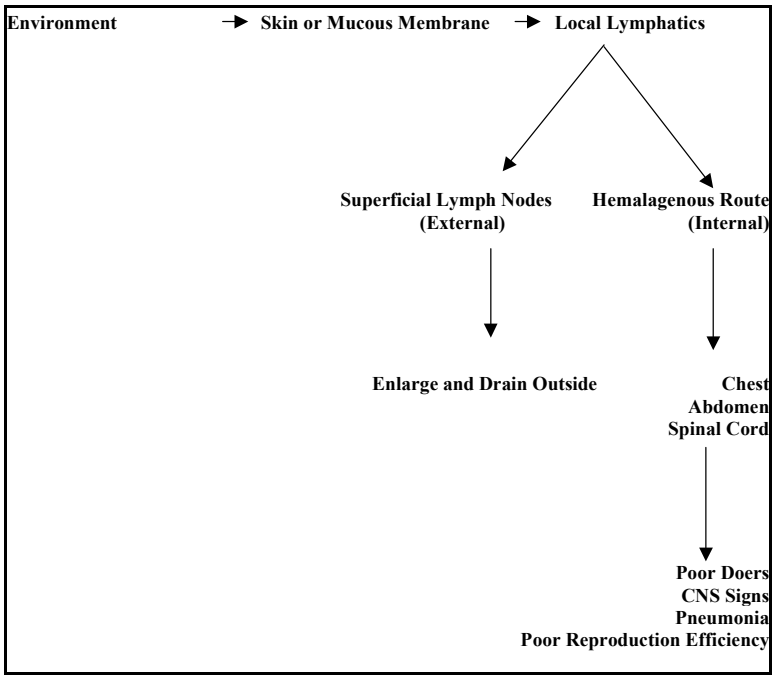


Common locations of swellings caused by CL.
Clipart by Jackie Nix

Caseous lymphadenitis is an infection of goats, caused by *Corynebacterium pseudotuberculosis*. It is also referred to as "abscesses", because of the peripheral swelling, rupture, and drainage of pus from affected lymph nodes. The prevalence of CL in commercial goat herds may be high as 30%. If abscesses affect more than one lymph node, the carcass will be condemned at slaughter. Decreased body weight and milk production also occurs, and reproductive efficiency is often lower when these animals have developed internal abscesses.

Clinical Signs: Most commonly, symptoms are palpable enlargements of one or more of the superficial lymph nodes. The morbidity or the infection rate in goat flocks increases with age, and may approach 70%. The enlarged lymph nodes have a very thick wall and are filled with thick greenish pus. The most common lymph nodes affected are mandibular (A in Figure 1), prescapular (B), prefemoral (C) and supramammary (D) lymph nodes. Less common is involvement of lymph nodes internally in the chest and abdomen. As the animal gets older, abscesses often develop around the lungs, heart, liver, kidney, and spinal cord. They may cause weight loss, pneumonia, and neurological signs.

Pathogenesis: C. pseudotuberculosis is spread in the environment by broken and draining external abscesses The organism survives in the environment for at least one year and can be spread on such items as shearing blades, fences, and feeders. The organism enters the goats body through small breaks in skin or mu-



cous membranes and eventually becomes localized in a regional lymph node. Heavy environmental bacterial contamination occurs in confinement operations and around feeders, goat dairies seems to have a high prevalence of caseous lymphadenitis. There is some evidence that the organism can penetrate intact skin and mucous membrane.

Diagnosis:

1. Presence of a firm to slightly soft subcutaneous swelling in the location of a lymph node.
2. Herd history of caseous lymphadenitis.
3. Culture: aspiration of the swelling and sending it to the diagnostic lab for isolating and identifying the organism.
4. Serology: serologic tests such as bacterial agglutination test and synergistic hemolysis - inhibition test are valuable in identifying goats with early stage of the disease (no abscess yet developing).

Serologic testing may not be accurate due to the presence of antibodies in previously exposed non-diseased animals or from cross-reactivity of diagnostic antigens with antibodies against other bacteria.

Treatment:

1. Separate and isolate the affected animals.
2. Ripened abscesses lanced and flushed with 7% iodine solution.
3. The pus should be flushed down a drain, or collected and burned.
4. Wear gloves to prevent skin infections in humans.
5. Wash hands well after handling infected animal.
6. Surgical removal of the encapsulated abscess offers the advantages that the treated animals need not be quarantined.
7. Antibiotic treatment has not been effective.

Eradication:

Herd eradication requires diligent management.

- Purchase animals from known non-infected herds.
- Quarantine and monitor new animals at least 60 days.
- Monitor and cull animals with multiple abscessed lymph nodes.
- Pasteurize milk for dairy kids..
- Housing free of sharp objects.
- Clean and disinfect feeders and pens regularly.
- Disinfect equipment like de-horners, scalpel blades, tattoo numbers/letters castrating instruments and other surgical instruments.
- Use a new hypodermic needle for each animal.
- Cull animals with chronic respiratory and wasting disease.
- Bedding cleaned out regularly.
- Pus should be collected and burned.

Vaccination: A vaccine is available and should be considered in management of CL in infected herds. Vaccine should be considered if you're previously described eradication methods haven't worked or failed. Colorado Serum Company is marketing Caseous-DT, an immunoprophylactic product composed of formalin-killed organism and toxoided culture supernatant fluid. (Also contains toxoids for clostridium perfringens type D and tetanus toxin.) Which has an efficiency of 70-80% in preventing the clinical manifestations of the disease. The vaccine may cause severe reaction in infected animals, and also interferes with serologic testing for CL.

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

Cashmere Harvesting.

Mimosine is present in seeds and leaves of *Leucaena leucocephala*, a tropical leguminous shrub or tree. Mimosine may cause defleecing mainly by arresting cell division in the follicle bulb. Research with Australian cashmere goats indicated that primary follicles were largely inactive during the winter (short daylength); secondary follicles became inactive about 1 month later and remained so for only a short period of time. This difference between follicle types may provide an opportunity to chemically defleece or remove cashmere fiber with minimal guard hair contamination. Guard hair retention also is of interest since cashmere goats are often shorn when temperatures are low, with accompanying susceptibility to cold stress. Ten 2-year-old Spanish wethers were used to determine effects of 2-day intravenous infusion of mimosine (beginning on January 8) on fiber shedding, follicle activity, and fiber regrowth. Primary and secondary follicle activity on day 0 averaged 43 and 96%, respectively. Five wethers were infused with mimosine and five others received saline. At 7 to 10 days after the start of infusion, all five goats infused with mimosine exhibited shedding, whereas shedding by controls was not observed. This finding and other results of this experiment indicate that mimosine is effective in removing down fiber of Spanish goats, similar to responses observed in Angora goats and in sheep. Proper timing of treatment offers potential to harvest cashmere of Spanish goats with minimal guard hair contamination, and guard hair retention offers the additional benefit of cold protection. Further research is necessary to determine practical methods of mimosine administration for harvesting cashmere.

J. Luo, A.J. Litherland, T. Sahlu, R. Puchala, M. Lachica, and A. L. Goetsch. 2000. Effects of mimosine on fiber shedding, follicle activity, and fiber regrowth in Spanish goats. J. Anim. Sci. 78:1551-1555.

Protein and Growing Goats.

Development of the Boer goat in South Africa has focused on size, muscling, and growth rate. Greater live weight and weight gain for Boers and Boer crossbreds than for other goat breeds have been documented in a number of countries. It is generally thought that growing/finishing animals with capacity for rapid growth require higher dietary protein levels to achieve potential growth rates. Although Boer goats can grow more rapidly than other types of goats, growth rates are less than for sheep, implying that nutrient requirements may not be markedly different from other goats. Boer (3/4) × Spanish (1/4) and Spanish wether goats, 4 to 4.5 months of age and 17.6 and 19.4 kg initial body weight, respectively, were used to determine the effects of protein concentration, 70% concentrate diets provided free-choice for 30 weeks in confinement, on growth. The concentration of crude protein in consumed dry matter was 9, 14, 17, and 22% (Diets 1, 2, 3, and 4, respectively). Average daily gain was greater for Diets 2 and 4 than for Diet 1 (76, 90, 85, and 100 grams/day for Diets 1, 2, 3, and 4, respectively) and for Boer × Spanish than for Spanish (97 vs 78 grams/day). Results of this experiment indicate a similar dietary protein requirement relative to feed intake for growing Boer × Spanish and Spanish wethers consuming high concentrate diets in confinement. Diets with a protein concentration of 14% or greater may support greater live weight gain than a diet with 9% protein. A ruminally degraded protein concentration of 11.5% of total digestible nutrients (i.e., TDN) seems adequate for unimpaired microbial digestion and protein synthesis. Further research on protein requirements of growing meat goats is warranted.

I. Prieto, A. L. Goetsch, V. Banskalieva, M. Cameron, R. Puchala, T. Sahlu, L. J. Dawson, and S. W. Coleman. 2000. Effects of dietary protein concentration on postweaning growth of Boer crossbred and Spanish goat wethers. Journal of Animal Science 78:2275-2281.

Tentative Year 2001 Activities

In the year 2001, The E (Kika) de la Garza Institute for Goat Research will sponsor several extension/education activities. We start with our annual Goat Field Day, which is always scheduled for the last Saturday in April. The 2001 Meat Buck Performance Test is co-sponsored by the Oklahoma Meat Goat Association and has been designated by the ABGA Board of Directors as an ABGA Approved Performance Test. In an effort to expand the walls of the University, this year we will again conduct three workshops away from campus. The Sustainable Internal Parasite Control workshops will be held on campus and in Tulsa and McAlester. The Artificial Insemination workshop will also be held on campus and in Tahlequah. Due to the hands-on nature of the 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 workshop 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 28, 2001	GOAT FIELD DAY	
May 5, 2001	Meat Buck Performance Test	
May 19, 2001	Mastitis Workshop (Langston)	
June 2, 2001	Sustainable Internal Parasite Control for Small Ruminants (Langston)	
June 16, 2001	Sustainable Internal Parasite Control for Small Ruminants (Tulsa)	
June 30, 2001	Sustainable Internal Parasite Control for Small Ruminants (McAlester)	
September 8, 2001	Demonstration Clinic: Artificial Insemination for Goats (Langston)	
September 29, 2001	Demonstration Clinic: Artificial Insemination for Goats (Tahlequah)	
December 1, 2001	Producer Grantwriting Workshop	

Please mail this form to:

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

ATTN: YEAR 2001 EVENTS

Noteworthy News

Drs. **Art Goetsch**, **Roger Merkel**, and **Tilahun Sahlu** traveled to Awassa College of Agriculture, Debub University, to attended a conference on Opportunities and Challenges of Enhancing Goat production in East Africa. They also visited Alemaya University of Agriculture in Ethiopia. At both universities, they lectured on ruminant nutrition and demonstrated experimental techniques.

Dr. **Tegene Negesse**, a visiting scholar from Awassa College of Agriculture at Debub University in Ethiopia, arrived to work with Dr. **Roger Merkel**.

The Langston DHI Laboratory was recently audited and recertified. The DHI Laboratory received a high score and continues to improve under the management of Mr. **Tim McKinney**.

Drs. **Steve Hart**, **Terry Gipson** and Mr. **Tim McKinney** attended the annual meeting of the American Dairy Goat Association in Cedar Rapids, IA. Mr. McKinney conducted a training session for the Langston DHI Laboratory and assisted in ADGA's tester training workshop.

Drs. **Steve Hart** and **Terry Gipson** gave presentations on meat goat production at the American Boer Goat Association field day in Marshall, AR.

Dr. **Roger Merkel** recently joined the faculty at the E (Kika) de la Garza Institute for Goat Research. Previously, Dr. Merkel was a visiting scholar at the Institute.

Dr. **Steve Hart** gave presentations on production at a meat goat field day in Phillipsburg, KS.

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