



# Goat Newsletter

Cooperative Extension Program  
Langston University

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

*Winter 2009*

## From the Director's Desk



Late fall and early winter is a special time of the year when we look back over the year's accomplishments and plan for the coming year. Looking back, it has been a good year for the institute. We have maintained a busy research schedule and conducted numerous extension activities, as well as balancing an international agenda. Many of you know that we are actively engaged in a developmental livestock project (Ethiopia Sheep and Goat Productivity Improvement Program), which I have talked about often in the newsletters. I just returned from an administrative trip to Ethiopia, where I meet with USAID officials and our collaborators from Prairie View A&M University. I am happy to say that USAID is pleased

with the overall performance of the project and we hope that this project will have a significant impact upon the small-scale sheep and goat producer in Ethiopia.

One of the extension activities that we have conducted this past year has been a collaborative project with Oklahoma State University on mortality composting. As I mentioned in the past newsletter, Drs. **Roger Merkel** and **Terry Gipson** and Dr. **Kefy Desta** of Oklahoma State University conducted a mortality composting workshop this past fall. Disposing of animal mortality is becoming an increasing problem for our small ruminant producers within the state. The workshop was well attended; but if you missed it, you can download the factsheet from our website at [http://www2.luresext.edu/goats/extension/AIGR\\_Ext-Bull\\_Mort\\_Compost.pdf](http://www2.luresext.edu/goats/extension/AIGR_Ext-Bull_Mort_Compost.pdf). Also on the website are two videos produced by Oklahoma State University SUNUP TV, which document the composting process ([http://www2.luresext.edu/goats/library/fact\\_sheets/mortality\\_composting.html](http://www2.luresext.edu/goats/library/fact_sheets/mortality_composting.html)).

This year was a year of minor change within the insti-

tute. Dr. **Steve Zeng**, our dairy foods technologist, has been selected as chair of the Department of Agriculture and Natural Resources. In 2010, Dr. **Zeng** will make the transition from research/extension specialist to administrator/teacher. This is an important advancement for Dr. **Zeng** but we shall miss him within the institute. Dr. **Zeng** is recognized nationally and internationally for his research on dairy products, as well as his cheese-making workshops. Dear dairy goat producers, rest assured that the institute is still deeply committed to the dairy goat industry and will continue to support it through continued research and extension activities. Our cheese-making workshops will continue as scheduled even as we undertake a national search for Dr. **Zeng's** replacement.

As I mentioned in the last newsletter, the Capacity Building Grants program is one of our major extramural funding sources. So, we are busy working on those proposals. We are contacting fellow scientists, as well as producers, to be collaborators. This year, the USDA has added an extension category in addition to the



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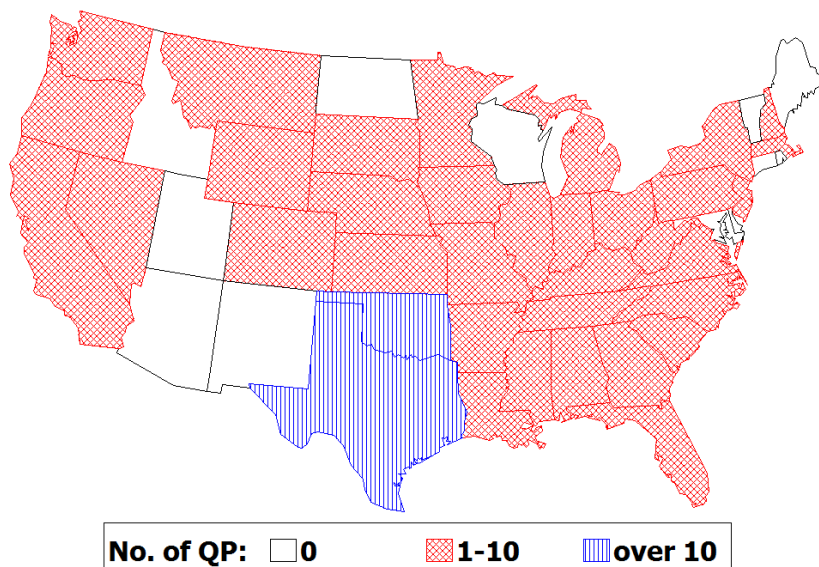
existing categories of research and teaching. This new category will assist us with some producer education activities, if we are successful, that we have developed but lacked internal funding to accomplish.

As always, this is the time of the year that we look forward to our annual Goat Field Day. In 2010, we will celebrate 25 years of field days. We are planning special events for this silver anniversary. I don't want to give too much away but we will be having a very special guest speaker and I know that you won't want to miss this upcoming field day. We are also planning other workshops in addition to the Goat Field Day. On April 23 (the day before our 25th annual Goat Field Day), Dr. **Steve Zeng** is planning a special cheese-making workshop. You can read more about that workshop on page 6. In March, Dr. **Roger Merkel** is planning a tanning hides workshop and you can read more about that workshop on page 5.

The number of Quality Producers certified through our Web-based Training and Certification Program for Meat Goat Producers has grown dramatically. We now have 147 certified producers from across the United States (see the map below) and several foreign countries such as Canada, India, Malaysia, Saudi Arabia, and the United Kingdom. If you have not yet enrolled, you can easily do so by going to <http://www2.luresext.edu/goats/training/QAnewuser.html> and completing the forms. Registration is FREE and so is the testing. We only charge a \$25 fee if you want the certificate. When you register, if you do not see your breed/producer association, there is a link to send us an email requesting that we add your breed/producer association to the list.

***I hope that 2010 is a blessed year for you and your goats and I hope to see you at the Silver Anniversary Goat Field Day on April 24, 2010.***

Distribution of  
Certified Quality Producers



# Preview of the 25th Annual Goat Field Day: The Goat Man

On April 24, 2010, the annual Goat Field Day at Langston University will celebrate its silver anniversary. In the fall newsletter, we learned of the early history of The Goat Man, who will be our featured speaker for the silver anniversary Goat Field Day. He became The Goat Man at Prairie View A&M University in 1978. Here is the history, in his own words, of The Goat Man becoming the The Goat Man.

In 1978, Prairie View A&M University started a dairy goat research program and The Goat Man was reassigned to develop the International Dairy Goat Research Center. He recalls that the interview for the new job was very short. The Dean asked him if he knew anything about dairy goats; yes, he said, they were those funny little cows with two tits. Close enough, said the Dean, and so it was that The Goat Man came to be. In 1983, as the result of a bureaucratic political shuffle, he relocated to Langston University in Oklahoma, to do extension work in dairy, Angora, and meat goats. In 1984, and with considerable assistance from The Goat Man, the American Institute for Dairy Goat Research was founded at Langston University. An early seminal work of The Goat Man at the newly-established institute was entitled "Oklahoma Dairy Goat Industry: Status, Problems and Opportunities", which will be reprinted in the proceedings of the 2010 Goat Field Day. Two legacies of The Goat Man while at Langston University include this newsletter, which he established in 1985, and the annual Goat Field Day, which he started in 1986. Both activities are still going strong and serving the goat producers just as when The Goat Man first started them.

The Goat Man retired in 1993 to raise meat goats in east Texas and do consultant work in goat management and marketing in Texas, New York,



Virginia, North Carolina, and Louisiana.

During his 40 year career, The Goat Man managed to publish 10 articles on Ruminant Nutrition and Milk Technology early on, then write 17 Extension Fact Sheets/Technical Bulletins on dairy, Angora, and meat goats, and prepare 41 articles on meat goat production, marketing, and meats for popular periodicals. He also did 13 international consultancies on livestock and goat nutrition and 16 domestic consultancies on

goat management and marketing, not to mention conducting 5 large-scale goat-grazing demonstrations for vegetative control in public forests and grasslands in Oklahoma, Arkansas, Alabama, North Carolina and Tennessee.

Since March of 2005, The Goat Man has written a monthly question-and-answer column for The Goat Rancher and also to share occasional articles on various facets of the industry. As a retired Extension Specialist, these exchanges and offerings have allowed The Goat Man to stay in touch with producers and to keep more or less abreast of events and developments affecting management and marketing of meat goats.

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*Editor's Note:* In the Spring Goat Newsletter, we will reveal the identity of the The Goat Man, although many of you may have already deduced his identity. Indeed the silver anniversary of the Goat Field Day will be an event that you will not want to miss. In addition to The Goat Man, there will be numerous break-out sessions in the afternoon for goat producers and activities for youth of all ages. Lunch will be our ever-delicious BBQ goat with goat milk ice-cream for dessert. Registration information will be available in the Spring Goat Newsletter.

# Research Spotlight

## ***Environment and Energy Expenditure.***

Eight Spanish and eight Boer yearling doelings were used to assess relationships between energy expenditure (EE) and ambient temperature (Ta), relative humidity (RH), and temperature–humidity index (THI). Four doelings of each genotype were housed in two 18 ft × 10 ft pens of an enclosed facility with a concrete floor without cooling and with heat provided only to prevent damage to waterers and water lines from freezing. EE was determined over 2-day periods 13 times during a 1 year period based on EE:heart rate (HR) of each doeling. Climate variables were averaged over 2, 4, 6, and 8 weeks preceding EE measurement. Doelings were fed to meet the maintenance energy requirement (MEM). Average mean, low, and high values during the 2 weeks preceding EE determination were 68, 46, and 89 °F for Ta and 53.6, 36.1, and 62.5% for RH, respectively. Neither Ta nor THI were correlated with or had significant effects in regressions to predict the difference between EE at particular measurement times and the 1 year mean (EE<sub>diff</sub>). Conversely, RH was correlated with EE<sub>diff</sub>. When the 13 HR measurement times were assigned to cool and warm seasonal periods, EE<sub>diff</sub> was affected by a genotype × period interaction. Nonetheless, the effect of RH in models including genotype, period, and genotype × period was significant for 2, 4, 6, and 8 weeks. The  $R^2$  of linear regressions of EE<sub>diff</sub> against RH was slightly greater for 2 and 4 vs. 6 and 8 weeks (0.11, 0.10, 0.08, and 0.07, respectively); regression coefficients for 2 and 4 weeks were 1.265 and 1.163 kJ/kg BW<sup>0.75</sup> per 1% RH, respectively. With RH of 50%, regression coefficient of 1.214 kJ/kg BW<sup>0.75</sup> per 1% RH, and MEM of 390 kJ/kg BW<sup>0.75</sup>, predicted MEM is 372 and 408 kJ/kg BW<sup>0.75</sup> at 35 and 65% RH, respectively. In conclusion, without extremes eliciting cold or heat stresses, RH appears to have a slight effect on MEM of meat goats by acclimatization in both cool and warm periods of the year.

Patra, A. K., R. Puchala, G. Animut, T.A. Gipson, T. Sahlu, A.L. Goetsch. 2009. Effects of acclimatization on energy expenditure by meat goats. *Small Ruminant Research*, Volume 81(1): 42-54.

## ***Heart Rate and Energy Expenditure.***

Eight Boer (75%) × Spanish (BS) and 8 Spanish (S) wethers (155 ± 8 days of age and 42 ± 5 lbs of body weight (BW) initially) were used in a replicated crossover design with a 2 × 2 factorial arrangement of treatments to determine effects of genotype, diet quality, and time of day on energy expenditure (EE), heart rate (HR), and EE:HR with ad libitum, near maintenance, and fasting levels of feed intake. Diets were 65% concentrate or coarsely ground alfalfa hay. Energy expenditure was ranked ad libitum > maintenance > fasting (0.22, 0.17, and 0.12 megacalories/lb of metabolic BW). Heart rate did not differ between genotypes when fasting and with maintenance intake, but was greater for S than for BS when intake was ad libitum (BS: 55, 71, and 92; S: 52, 72, and 100 beats/min for fasting, maintenance, and ad libitum, respectively). There was an interaction in EE:HR between level of feed intake and genotype (BS: 2,284, 2,404, and 2,151; S: 2,181, 2,396, and 2,245 calories/lb of metabolic BW:beat/min for ad libitum, maintenance, and fasting, respectively), without an effect of diet. The effect of time on EE, HR, and EE:HR differed among levels of intake. General patterns of change in EE and HR as time of day advanced did not differ, but increases near meals followed by decreases were of slightly greater magnitude for maintenance than for ad libitum intake. The ratio of EE:HR was greater for the maintenance level of feed intake than for ad libitum intake at most times. These results indicate similar potential for use of HR to predict EE of different genotypes of growing meat goats and that establishing EE:HR with different diets or levels of intake may not be crucial. Magnitudes of difference among hours suggest that when EE:HR is used to predict EE of confined goats from full-day measurement of HR, EE:HR should be determined over an extended period of time, such as 24 hours.

Puchala, R., I. Tovar-Luna, T. Sahlu, H. C. Freely, and A. L. Goetsch. 2009. Technical Note: The relationship between heart rate and energy expenditure in growing crossbred Boer and Spanish wethers. *Journal of Animal Science* 87: 1714-1721.



# Tanning Goat Hides Workshop



*Dr. Merkel examines a tanned Angora hide.*



*Fleshing at last year's Goat Field Day..*

Have you ever wondered how to tan a hide? On Saturday, March 13, 2010, a tanning hides workshop will be held at Langston University from 8:00 a.m. to 12 noon. The focus of the workshop will be tanning hair-on hides but the process of dehairing hides and making leather and buckskin will also be discussed. After discussing the stages of tanning from how to handle and store a raw hide to softening and finishing a tanned skin, participants will have hands-on practice with goat skins in several of the different tanning steps. Participants can practice fleshing,

will apply tanning chemicals in two different methods, and soften a goat skin prepared for the workshop. Various tanning methods will be discussed and examples of tanning kits and chemicals displayed. All of the tanning procedures presented and chemicals used are appropriate for home tanning with all of the work done by hand. While the tanning of goat hides will be demonstrated, the processes learned can be used on deer, coyote and other skins. Registration is limited to 10 participants.

***There is a registration fee of \$10/person. Refreshments will be provided.***



*Liquid tanning method.*



*All ages are invited to attend the workshop.*

*For more information regarding the tanning hides workshop, contact Dr. Roger Merkel at (405) 466-6134 or [rmerkel@luresext.edu](mailto:rmerkel@luresext.edu). A registration form is available online at <http://www2.luresext.edu/goats/extension/tanning.htm>.*

# Cheesemaking Workshop with Renowned Cheese Instructor

Our ever-popular goat milk cheesemaking workshop has been scheduled on Friday, April 23, 2010 (the day before our annual Goat Field Day April 24). Mr. Neville McNaughton, President of CheezSorce, L.L.C. in Davisville, MO will be our distinguished Invited Instructor for this year's workshop. Mr. McNaughton is an internationally renowned cheese entrepreneur, creator, designer, evaluator, marketer and writer in the world of cheese. He has hosted cheesemaking workshops, judged cheese contests and designed cheese plants in the U.S. as well as internationally. He will share with us his rich background, hands-on experience and masterful skills in small-scale cheese manufacture, particularly goat milk cheeses. He will demonstrate basic principles and practical skills of making soft, semi-soft and hard cheeses using our own Grade "A" goat milk. Milk quality, cheesemaking facility and marketing strategies will also be discussed. This one-day hand-on workshop will be held in the pilot creamery at Langston University. **There is a registration fee of \$40.00/person**, which includes a free continental breakfast and a free lunch consisting of goat meat BBQ goat, stick, goat milk ice cream and cheeses, etc. **Only the first 20 registrants will be admitted.**



*Dr. Zeng leading a cheese-making workshop.*

*For registration information, please contact Dr. Steve Zeng, Dairy Product Specialist, at (405)466-6145 or [szeng@luresext.edu](mailto:szeng@luresext.edu).*

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## National Goat Conference - Strengthening the Goat Industry

Florida A&M University, in partnership with Langston University and several other universities, will be hosting a national conference on the goat industry. This conference is designed for small-scale goat producers, animal science educators, animal science students, cooperative extension professionals, land-grant faculty and research scientists, industry professionals (and more) to share information and resources to support sustainability for the national goat industry.

**When: September 12-15, 2010**

**Where: Tallahassee, Florida**

Conference information and registration material will soon be available at <http://www.famu.edu/index.cfm?goats>.

*For more information about the national goat conference please contact Dr. Ray Mobley at (850) 412-5252 or e-mail [ray.mobley@famu.edu](mailto:ray.mobley@famu.edu) or Ms. Angela Mckenzie-Jakes at (850) 875-8557 or e-mail [angela.mckenziejakes@famu.edu](mailto:angela.mckenziejakes@famu.edu).*



# RREA Project - Year Two

A forestry and goats demonstration site was established in an overgrown pine forest at the Kiamichi Forestry Research Station (Idabel, OK) of Oklahoma State University. In 2008, twenty-five young Boer wether goats were placed on the demonstration site for 12 weeks and in 2009, fifteen Spanish wethers were placed on the demonstration site for 28 weeks. The goats were very successful in eliminating the undesirable understory vegetation as witnessed by the two photos below.



Plot 3 in 2008 (left) before the introduction of goats and after the 2009 grazing season (right).

For the 15 goats in 2009, a FAMACHA score, which is based upon the eye mucous membrane color, was evaluated at the beginning and end of the grazing season. Also, a fecal egg count was conducted on each goat at the end of the grazing season and those results are in the table below.

ID	FAMACHA score			FEC (epg)
	4/15/2009	11/2/2009	Change	
7502	2	4	2	4,600
7503	2	4	2	3,000
75011	2	4	2	11,000
75012	2	3	1	3,200
75017	2	3	1	1,150
75018	2	3	1	950
75020	2	2	0	1,050
75030	3	3	0	550
65022	2	3	1	200
65027	2	3	1	300
65029	2	3	1	100
65031	2	2	0	1,350
65043	3	3	0	950
65044	2	3	1	650

Wether goats need to be dewormed when their FEC exceeds 2,000 eggs per gram (epg) of feces. If the FEC is less than 2,000 epg, the goats can cope with only a small loss in production. It is interesting to note that the three goats with a FAMACHA score of 4 (anemic) had FEC well above 2,000 epg; thereby, validating the use of FAMACHA as an excellent management tool. Also, it is important to notice that only four of 15 goats needed deworming. This emphasizes the fact that blanket deworming of the entire herd is ill-advised and only those animals needing deworming should be dewormed. If any one of these four goats need to be dewormed on a consistent basis, then it should be culled.

# Noteworthy News

► In October, Dr. Steve Hart traveled to Booneville, AR to make an invited presentation on forages and browse for goats at the Sheep and Goat Field Day.

► In October, Dr. Steve Hart conducted a parasite workshop in Ada, OK.

► In October, Dr. Steve Hart spoke on parasite management at the Corn Country Commercial Goat Conference in Corydon, IN.

► In November, Dr. Terry Gipson traveled to Huntsville, AL to speak on goat management at the Risk Management & Community Outreach Conference hosted by Alabama A&M University.

► In November, Dr. Steve Hart

spoke on parasite management at the annual meeting of the Oklahoma Meat Goat Association in Kellyville, OK.

► In November, Drs. Terry Gipson, Art Goetsch, Roger Merkel, Ryszard Puchala, Zaisen Wang, and Steve Zeng presented research findings at the Research Day Conference at Northeastern State University in Broken Arrow, OK.

► In November, Dr. Susan Chebet, Principal Administrative Officer of Extension & Outreach at Moi University in Eldoret, Kenya, visited Langston University.

► In November and December, Dr. Tilahun Sahlu traveled to Addis Ababa, Ethiopia to work on administrative activities of

the Ethiopia Sheep and Goat Productivity Improvement Program.

► In December, Dr. Art Goetsch traveled to Ethiopia to work on research activities of the Ethiopia Sheep and Goat Productivity Improvement Program.

► In December, Dr. Terry Gipson traveled to Dover, DE to work with the leadership team of the Goat Industry Community of Practice of the eXtension initiative.

► In December, Drs. Terry Gipson, Steve Hart, and Roger Merkel traveled to Rapid City, SD to work with a consortium of universities to discuss the possibility of a Northern Plains edition of the Meat Goat Production Handbook.



Goat Newsletter

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