Goat Newsletter

Cooperative Extension Program
Langston University

The Newsletter of the E (Kika) de la Garza American Institute for Goat Research *Winter 2007*

From the Director's Desk

As is my habit, I often start this section by saying something about the weather in Oklahoma. The weather this past year can perhaps be summed up as bad. We here at Langston were spared the brunt of the recent ice storm; however, much of the state was not spared. Following the ice storm, President Bush issued a federal disaster declaration for Oklahoma. This sets a national record with eight federal disaster declarations this year. Maybe that Al Gore guy knows something. As I said, we were fortunate in that we did not suffer any damage at the farm; however, we did have considerable ice on the ground and trees. Even in this adverse environment, the farm crew still had to operate and maintain the animals. I want to thank each of the farm crew members for their service and dedication to the program. Without them, the research would not be possible.

Speaking of research, we are pleased to welcome back Dr. **Ignacio Tovar-Luna** of the University of Chapingo in Bermejillo, Mexico. Dr. **Tovar-Luna** worked on the nutrient requirement project from 2001 to 2004. He will be working with Drs. **Asefa Asmare** and **Art Goetsch** on a USDA 1890 Institution Research Capacity Building grant entitled "*The Ability of Goats to Withstand Harsh Nutritional Environments*" and with Drs. **Goetsch** and **Terry Gipson** on a project entitled "*The Grazing Activity Energy Cost of Goats*". ***Welcome back, Ignacio.***

I would like to congratulate Dr. **Steve Zeng** for being awarded a USDA 1890 Institution Research Capacity Building grant. In this new research project, Dr. **Zeng** will study the effects of sub-clinical mastitis in dairy goats and its impact on goat milk quality and cheese yield.

Dr. **Steve Hart** has been busy conducting collaborative research with Fort Valley State University in Georgia. The objective of the research trials is to investigate alternatives to chemical dewormers, which have become less efficacious in recent years. One study involved the use of copper oxide wire particles. Goats were given a traditional chemical dewormer, copper oxide wire particles at the rate of 2 grams per day, and no treatment. A second study involved sericea lespedeza, which contains high levels of condensed tannins. Goats were fed sericea lespedeza at 0, 10, 20, 40, and 100% of their diet. In a third study, goats were fed wormwood at 0, ½ or ¾ lb of wormwood per day. Dr. **Hart** is conducting the laboratory work and we will report his results in upcoming newsletters. Watch for them.

Dr. **Zaisen Wang** has also been conducting research on internal parasite control. He has an on-going research experiment to study the effect of dietary protein on tissue glutathione concentration and cytokine expression in goats. In this experiment, Dr. **Wang** is studying the physiological effects and the subsequent abil-

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ity of goats on a low-protein or high-protein diet to resist internal parasite infections.

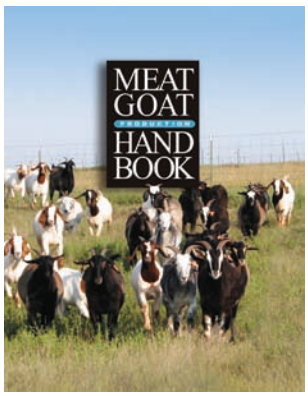
On the extension side, we have been very busy also. In September, we were the hosts to 14 Alabama meat goat producers. Through a program administered by one of our sister universities Alabama A&M University, these goat producers were able to spend 2½ days at Langston University. The first 1½ days were dedicated to workshops including goat management, herd health, principles of goat nutrition, web-based nutrition calculators, breeding and selection, goat budgets, external parasites, and control of internal parasites. The last day, the Alabama producers attended the artificial insemination (AI) workshops conducted by Drs. **Lionel Dawson** and **Gipson.** A total of 27 participants attended that AI workshop. While Drs. **Dawson** and **Gipson** were in Ethiopia in early October, Dr. **Hart** conducted the AI workshop in Tahlequah where 12 participants attended. Later in October, Dr. **Gipson** conducted the AI workshop in Antlers where 21 participants attended.

The Web-based Training and Certification Program for Meat Goat Producers web site is gaining in popularity. We have 416 participants enrolled in the program and 42 have completed the certification program. You can read more about the certification program on page 4 of this newsletter.

Our recently published Meat Goat Production Handbook is selling well. The cost is $50 and I must say that it is well worth the price. It is full of so much valuable information.

Drs. **Dawson**, **Gipson**, **Goetsch**, and **Merkel** have been very involved in the Ethiopia Sheep and Goat Productivity Improvement Program. Drs. **Dawson** and **Gipson** have assisted with the importation and in-country quarantine of Boer goats and Dorper sheep. I am happy to say that the Boers and Dorpers have moved out of quarantine and are now in breeding groups at the four nucleus breeding sites around Ethiopia. Dr. **Merkel** has been providing vital assistance to the development of the Sheep and Goat Handbook for Ethiopia and the numerous technical bulletins. Dr. **Goetsch** has been assisting with carcass quality research in native sheep.

That's all, folks



Research Spotlight

Abstracted by A. Goetsch

Feeding Broiler Litter.

Sixty Spanish and 40 Boer × Spanish doelings (33 and 48 lbs initial BW, respectively, and approximately 6 months of age) were used in an experiment with four 3-week periods to determine effects of dietary broiler litter (L) level on growth performance. There were two groups per treatment with six Spanish and four Boer × Spanish doelings in each. Dietary treatments were 20% coarsely ground millet hay and 80% concentrate, which consisted of 0 (0L), 20 (20L), 40 (40L), or 60% L (60L; total dietary level). An additional treatment was 80% hay and 20% concentrate (80F). Concentrate (primarily corn and L when included) DM intake (DMI) was 1.5, 1.3, 1.4, 0.9, and 0.4 lb/day and total DMI was 1.9, 1.7, 1.8, 1.1, and 1.5 lb/day for 0L, 20L, 40L, 60L, and 80F, respectively. There was a dietary treatment × genotype interaction in ADG (Spanish: 0.24, 0.19, 0.16, 0.02, and 0.08 lb/day; Boer × Spanish: 0.38, 0.26, 0.23, 0.02, and 0.13 lb/day for 0L, 20L, 40L, 60L, and 80F, respectively. ADG:DMI ranked 0L > 20L > 40L > 80F > 60L (0.152, 0.130, 0.102, 0.018, and 0.065 for 0L, 20L, 40L, 60L, and 80F, respectively. The acetate:propionate ratio in ruminal fluid was greater for 60L and 80F than for other treatments (1.60, 1.73, 2.18, 3.80, and 3.67 for 0L, 20L, 40L, 60L, and 80F, respectively). Liver Cu concentration at the end of the experiment was influenced by dietary treatment (88, 275, 478, 286, and 47 ppm for 0L, 20L, 40L, 60L, and 80F, respectively). In conclusion, broiler litter can be effectively used in diets for growing meat goats, but high levels, such as above 40% of dietary DM, may restrict performance primarily via limited feed intake. However, the level of broiler litter below this threshold impacts efficiency of feed utilization.

T. Negesse, A.K. Patra, L.J. Dawson, A. Tolera, R.C. Merkel, T. Sahlu and A.L. Goetsch. 2007. Performance by goats and sheep consuming a concentrate-based diet subsequent to grazing of grass/forb pastures at different stocking rates. Small Ruminant Research 69:187-197.

Creep Grazing.

Twenty-six Spanish does with twin Boer × Spanish kids and 26 Boer × Spanish does with twin 3/4 Boer–1/4 Spanish kids were used in a 76-day experiment to determine effects of stocking rate and creep grazing on pre-weaning performance. The study commenced approximately 2 months after kidding. There were four treatments, three involving stocking rate and one creep grazing. Groups had 4 does with 8 kids for the low stocking rate, 6 does with 12 kids for a moderate stocking rate, and 8 does with 16 kids for both the high stocking rate and creep grazing treatment. Groups grazed one acre pastures of various grasses and forbs. Kids of creep grazing groups also had access to similar one acre pastures that contained the tree legume mimosa (*Albizia julibrissin Durazz*). All pastures consisted of four equal size paddocks that were sequentially grazed twice by the same animal groups (i.e., phases 1 and 2 were 48 and 28 days in length, respectively). Post-grazing forage mass decreased linearly with increasing stocking rate (1693, 1294, 826, and 1024 lb/acre). ADG by does (0.10, −0.04, −0.12, and −0.004 lb/day) and kids (0.17, 0.13, 0.08, and 0.18 lb/day) linearly decreased with increasing stocking rate; however, kid BW gain per unit land area was similar among treatments (102, 123, 101, and 110 lb/acre for low, moderate, high stocking rate, and creep grazing, respectively). Kid ADG was similar between genotypes but doe ADG differed (−0.10 and 0.07 lb/day for Spanish and Boer × Spanish, respectively). In conclusion, creep grazing with high stocking rate for does can increase ADG of does and kids but not relative to lower stocking rate for both does and kids. Spanish does with Boer × Spanish kids may be less able to maintain or increase BW while supporting kid growth compared with Boer × Spanish does.

M.D. Yiakoulaki, A.L. Goetsch, G. Detweiler and T. Sahlu. 2007. Effects of stocking rate and creep grazing on performance by Spanish and Boer × Spanish does with crossbred Boer kids. Small Ruminant Research 71:234-242.

Certified Goat Producer Website is Busy in 2007.

In late 2006, Langston University in partnership with 10 other universities and 5 meat goat producer groups unveiled an on-line training and certification program (http://www2.luresext.edu/training/qa.html). The program consists of 22 learning modules. Participants take pre- and post-tests and must record a minimum score of 85% to pass the 16 required and a minimum of 3 elective modules for certification. Should a score of 85% be achieved on the pre-test, the participant has no need to take a post-test. As of November 2007, 416 participants from 12 countries have registered for the program.

Country	Number Enrolled
US	389
Canada	12
India	4
Malaysia	2
Pakistan	2
Australia, Jamaica, Mexico, Nigeria, Peoples Republic of China, Romania, and Zimbabwe	1 each

Forty-four states are represented with the top 6 states representing 51% of total participants.

State	Number Enrolled
OK	76
MO	35
TX	35
TN	23
KS	16
AR	12

Forty-two participants have been certified. Of those certified 40 are from the USA and 2 from Canada. The states with the largest number of certified producers are TX and TN.

Of those certified, 16 respondents farmed 5 – 20 acres (2 -8 ha), 5 respondents farmed either 21 – 40 acres (8 – 16 ha) or 161 – 320 acres (64 – 128 ha). Two respondents farmed less than 5 acres (2 ha). Twenty-seven respondents (69%) owned less than 50 goats and only 1 producer had over 250 animals. Of those certified responding, 20 reported that goats provide less than 10% of their total income and only one reported that goats are responsible for a majority of their annual income (76% or above). The farm and herd sizes of producers receiving certification is indicative of the current US goat industry. Results indicate that goat producers will access production information in a web-based format. Such a format is one method to reach large numbers of people and can successfully augment a more traditional extension/outreach component of one-on-one interaction of extension specialists and producers.

State	Number Certified
AL	1
AR	2
CO	1
FL	2
GA	2
IA	1
IN	1
KS	2
KY	3
MA	1
MB (Canada)	1
MN	1
MO	2
MS	2
MT	1
NV	1
OH	1
OK	4
ON (Canada)	1
TN	5
TX	6
VA	1

Goat producers who were certified in 2007 are presented on page 6.

(cont. next page)

A greater proportion of males (230) than females (186) enrolled in the certification program. The same gender proportion of enrolled participants also existed for those becoming certified, 24 males vs 18 females. For those responding to a question concerning employment, a greater proportion of females than males enrolled in the program were engaged in full-time farming compared to part-time farming 51 vs 36 and 113 vs 145 for females and males engaged in full- and part-time farming, respectively . However, this trend did not hold for the certified participants and more certified females than males responded as being full-time farmers, 7 vs 4 and 6 vs 15 for females and males engaged in full- and part-time farming, respectively. No differences were found between males and female participants in farm size or herd size. Females tended to score higher on pre-tests than males (85.4 vs 80.3%) and a proportionately higher percentage of males than females were required to take post-tests. There was no difference in post-test scores between genders. Males tended to record a greater difference between pre- and post-test scores than females (11.0 vs 5.2%). Results show that women goat farmers will actively participate in an on-line certification program. Pre-test scores show that the knowledge of women producers was on par or above that of male producers. The similarity in post-test scores is an indicator of the effectiveness of the training modules.

Potential First Cheese Contest in Oklahoma?

A few goat producers and cheese lovers in OK have expressed interest in inaugurating an Oklahoma Cheese Contest for hobby and commercial cheese makers at the state fair next September. Recently we had a lengthy discussion about the idea with several state fair coordinators. They are looking for new ideas and concepts to diversify their annual event and were extremely excited about a first ever cheese contest in OK. They have even assigned the Creative Arts building for a potential cheese contest. However, before we proceed, we would like to have your feedback to determine its feasibility. An entry fee of $5.00 to $10.00 has been discussed. If you have interest in submitting a cheese entry or entries, please contact Dr. Steve Zeng, a judge of both U.S. and World Cheese Championship Contests, via e-mail szeng@luresext.edu or call him at 405-466-6103 before March 15, 2008.

Congratulations to the 2007 Quality Producers

Name	City	State	Associations[1]
Barnes, Warren	Summersville	MO	AKGA
Bivens, Derial	Hickman	TN	USBGA
Black, Jan	Dover	TN	none
Carlton, William	Harrison	AR	ABGA
Davis, Sara	Gardner	MA	ABGA, AMGA
Dunlap, James	Tulsa	OK	none
Ellis, Cynthia	Bell	FL	ABGA
Ely, Leann	Earlham	IA	ABGA
Fifield, Jim	Charlotte Ch	VA	ABGA, AMGA
Forsythe, Garry	Athens	AL	AKGA
Foster Erickson, Georgiann	Cahone	CO	USBGA
Funk, Herman	Stanberry	MO	ABGA
Groat, Ken	Boyd	TX	ABGA, AMGA
Groat, Brenda	Boyd	TX	ABGA, AMGA
Groat, Autumn	Boyd	TX	ABGA, AMGA
Hassell, Lynda	Alto	TX	ABGA, USBGA
Hill, Deborah S.	Burlington	KY	none
Holcomb, Mary	Sparks	GA	ABGA
Holman, Brad	Waco	KY	IKGA
Hylander, Jennifer	Byhalia	MS	ABGA
Jackson, Darren	El Dorado	KS	ABGA
Johnson, Scott	Jayess	MS	ABGA, AKGA
Kruger, Rian	Cloverdale	IN	ABGA
Larocque, Sandra	Sifton	MB	none
Marsh, Michael	Fallon	NV	ABGA, AMGA, USBGA
Martin, Deborah	Ellaville	GA	none
Meister, Joshua	Fayetteville	AR	AKGA
Meyer, Greg	Aitkin	MN	ABGA
Motes, Patricia	Leoma	TN	none
Motes, Kenneth	Leoma	TN	USBGA
Novak, Ron	Lawrenceburg	TN	AMGA, IKGA
O'Brien, Tom	Mattawa	ON	none
Pankhurst, Khristina	Nowata	OK	ABGA
Pettigrew, Bill	Denton	TX	ABGA
Purtee, Michael	Kettering	OH	USBGA
Scharlow, Teena	Melstone	MT	ABGA, USBGA
Stampfli, John	Cedar Hill	TX	none
Sylvester, Robert	Monticello	FL	none
Trotter, Susan	Nowata	OK	none
Waldrop, Kelly	Fredonia	KY	AKGA
Watkins, Stacey	Mead	OK	AKGA
Zirkle, Cara	Harveyville	KS	AMGA

[1]**Associations**:
ABGA = American Boer Goat Association
AMGA = American Meat Goat Association
AKGA = American Kiko Goat Association
IKGA = International Kiko Goat Association
USBGA = United States Boer Goat Association

Tanning Goat Hides

by R. Merkel

Many goats have attractive hides that could be tanned and used in many ways. Learning the art of tanning hides can be very rewarding, through acquisition of new skills and the attractive products resulting from the endeavor. On November 3, 2007 at the Institute farm, Dr. Roger Merkel presented a workshop on tanning goat hides. Interested producers learned about skin structure and how it relates to different types of tanning – hair-on, leather and brain tanning (the traditional method of making buckskin). Participants also learned about different tanning chemicals and their usage. The basic steps of tanning – skinning the animal; preserving the hide; fleshing the hide; pickling and neutralizing; the actual tanning process; oiling; drying and softening; and finishing – were discussed and explained.

Participants also had the opportunity to try some of the steps on hides prepared for the workshop. Preservation was done by rubbing salt on a hide to stop bacterial action that causes hair slippage. Preserving a hide by freezing was also explained. Workshop participants fleshed two hides, meaning they scraped off all the fat, meat and membrane attached to the flesh side. This was done using a fleshing beam (a blunt, rounded edge 2 x 6 board about 5 feet long with one end resting on the ground and legs lifting the blunt edge to waist height) and fleshing knife (a blunt edged curved knife with handles on each end). Prior to the workshop, a hide was prepared in an acid pickle solution. This hide was neutralized by soaking in a neutralizing solution of sodium bicarbonate and water for 20 minutes. The hide was drained and then tanned.

Workshop participants tanned two hides by different methods during the hands-on portion of the workshop. One method used a synthetic tanning powder prepared in a solution in which the hide was placed. The second hide was tanned using a "paint-on" tan that was applied directly to the flesh side of the prepared hide. Care for the hides immediately after tanning and the application of oil to the hides was demonstrated. Finally, the participants all tried softening a hide that had been tanned prior to the workshop. Softening was done by pulling and stretching a tanned hide around a steel cable, hard work but worth the effort to have a soft, velvety hide.

Workshop participant tanning a hide with a paint-on tan.

To learn more about tanning or to see some pictures of a fleshing beam, fleshing knife and tanned hides, see the "Tanning Goat Hides" article from the 2007 Annual Goat Field Day Proceedings (http://www2.luresext.edu/goats/library/field/merkel07a.pdf). Contact Dr. Roger Merkel, rmerkel@luresext.edu or 405-466-6134 for further information.

Noteworthy News

In September, Dr. **Steve Zeng** was invited as a panelist to the Cheese-2007 in Bra, Italy. This cheese celebration was sponsored by Slow Food and showcased thousands of artisanal cheeses of cow, goat, sheep, buffalo and even yak milk from all over the world.

In September, Dr. **Steve Hart** spoke at South Texas Goat Producers Coop workshops in Crystal City, Eagle Pass, and Del Rio, TX.

In September, Dr. **Steve Hart** conducted a parasite workshop in Antlers, OK

In September, Dr. **Terry Gipson** conducted an artificial insemination workshop at Langston University.

In October, Dr. **Steve Hart** conducted an artificial insemination workshop in Tahlequah, OK and Dr. **Terry Gipson** conducted an artificial insemination workshop in Antlers, OK.

In October, Dr. **Steve Hart** conducted a parasite workshop at Goat Boot Camp in Ada, OK and participated in multispecies field day at Bartlesville, OK.

In October , Drs. **Lionel Dawson**, **Terry Gipson**, and **Roger Merkel** traveled to Ethiopia to work on the Ethiopian Sheep and Goat Productivity Improvement Program.

In November, Dr. **Steve Hart** spoke at South Texas Goat Producers Coop workshops in Del Rio, Uvalde, and Dilley, TX.

In November Dr. **Art Goetsch** traveled to Washington DC to participate in a USDA panel for review of current research projects.

In November, Dr. **Steve Hart** participate in a Goat Field Day in Ada, OK

In December, Dr. **Art Goetsch** traveled to Ethiopia to work on the Ethiopian Sheep and Goat Productivity Improvement Program.

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