Goat Newsletter

Cooperative Extension Program
Langston University

The Newsletter of the E (Kika) de la Garza American Institute for Goat Research *Spring 2014*

From the Director's Desk

This is always a very busy time of the year for us. Two major activities dominate our time.

The first is grantwriting. In the spring of every year, proposals for USDA's 1890 Institution Teaching, Research, and Extension Capacity Building Grants Program are developed and submitted. For those of you not familiar with the term "1890 Institution", here is a brief history. The Civil War, was the single most important factor leading to the establishment of the educational institutions for African-Americans in the Southern States. Even after the abolition of slavery, African-Americans were not permitted to attend institutions in the South that were established under the Morrill Act of 1862; although the law did provide for separate but equal facilities. To overcome the problem of segregation, a second Morrill Act was passed in 1890 specifically to support the Negro Land-Grant institutions. Thus, the Negro Land-Grant institutions are referred to today as "The 1890 Institutions." Those Southern States which did not have institutions by 1890 each established one later under this Act. Langston was established in 1897 and immediately became an 1890 Institution.

These Capacity Building Grants are key to our research, extension, and teaching programs. For example, our active research Capacity Building Grants, with principal investigator in parenthesis, are listed below.

- *Genomics of Resilience in Sheep to Climatic Stressors (Dr. Art Goetsch).*
- *Sustainable Small Ruminant Production through Selection for Resistance to Internal Parasites (Dr. Tilahun Sahlu)*
- *Effects of Selected Nutritional Components on Immunity to Haemonchus in Goats (Dr. Zaisen Wang).*
- *Establishing a Langston University Testing Center for Electric Fence Modifications of Cattle Barb Wire Fence for Goat Containment (Dr. Art Goetsch).*

Our active extension Capacity Building Grants are listed below.

- *Extension Education Delivery Tools for Dairy Goat Producers: A Web-Based Certification Program and E-Book (Dr. Roger Merkel)*
- *Training Farmer Educators on Goat Mortality and Butcher Waste Composing, A Regional Approach (Dr. Roger Merkel)*
- *Enhancing Production Capabilities of Socially Disadvantaged and Underserved Farmers via Low-Literacy Meat Goat Production Training Materials in English and Spanish (Dr. Terry Gipson)*

Generally, each of our scientists will submit a Capacity Building Grants proposal every year. If they are not successful, then a scientist will revise the proposal according to reviewers' comments. However, if not successful a second time, the scientist will develop a new proposal. So you see, we are constantly busy developing and/or revising proposals.

The second major activity is preparing for our annual Goat Field Day. This year, our theme is Kidding and Kid Management and you can read more about our Goat Field Day on page 3 of this newsletter. The topic of kidding and kid

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management is very important for all goat producers. USDA/APHIS conducted a survey of goat producers several years ago and reported several interesting results. I have summarized a few results.

1. *93% of meat goat does bred and 91% of dairy goat does bred actually kidded.*
2. *95% of kids were born alive.*
3. *2.5% of bred does aborted.*
4. *11.5% of kids born alive died before weaning. Kids on large operations experienced a higher mortality compared with kids on small and medium operations.*
5. *70.0% of kids were born from January through April.*
6. *Dairy goat operations had a higher percentage of does that had multiple kids (twins/triplets; 68%) versus 47% for meat goat operations.*
7. *A higher percentage (78%) of dairy goat producers reported using one breeding season per year compared with meat goat producers (42%), while 37% of meat goat producers reported using "No defined breeding season."*
8. *70% of dairy goat producers have their does kid in a barn or shed as compared to 55% for meat goat producers. 46% of meat goat producers have their does kid on pasture as compared to 20% for dairy goat producers.*
9. *A higher percentage of dairy goat operations (57%) separated first-kidding does compared with meat goat operations (37%).*
10. *More than one of four dairy goat operations (28%) normally bottle fed kids compared with less than 0.5% of meat operations. Nursing was the most common method of feeding newborn kids on meat operations (88%).*
11. *A higher percentage of dairy goat operations provided creep or starter feed to kids compared with meat goat operations.*

Points #1 through #3 tells us that goats generally do not have a problem with fertility. However, a problem tends to creep in with point #4 and that is why we chose this year's theme. If we can reduce kid mortality with improved kid management, then we will enhance the profitability of the operation. However, points #6 through #11 demonstrate that improved kid management must be tailored to production objectives as dairy and meat goat producers differ in their management styles.

In addition to our annual Goat Field Day, we will be hosting a cheesemaking workshop and a mortality composting workshop on the day before the Goat Field Day. Dr. **Steve Zeng**, our Dairy Foods Technologist, will be conducting the cheesemaking workshop. Participants will learn the fine art of cheesemaking from soft chevre to aged cheeses. This is a limited-attendence workshop and persons interested in attending should contact Dr. **Zeng**. Dr. **Roger Merkel** will be organizing the workshop on mortality composting. All livestock producers encounter mortality. Producers may experience annual mortality losses of up to 10% of young before weaning and 5% of adult breeding animals. Dead animals must be disposed of promptly.

If you cannot attend either of these pre-Goat Field Day workshops, you will be able to listen to some of the workshop speakers in the afternoon sessions of the Goat Field Day.

I hope to see you at the Goat Field Day.

Kidding and Kid Management: Goat Field Day 2014

Our annual Goat Field Day will be held on Saturday, April 26, 2014 at the Langston University Goat Farm with registration beginning at 8:00 a.m. This year's theme will be **Kidding and Kid Management**.

Adult Activity (morning session): This year our featured speakers will be Ms. Jan Carlson and Dr. Charlotte Clifford-Rathert.

Ms. Jan Carlson has managed the University of California Davis Goat Facility for the past 14 years, maintaining breeding-teaching-research herds of approximately 140 goats (80 dairy, 40 Boer, and a group of transgenic research goats). She also teaches goat husbandry/animal science classes both in the classroom and at the goat facility.

Ms. Carlson began working with goats in 1979, when she was hired to work on a research project involving a just-discovered goat virus, later named Caprine Arthritis Encephalitis Virus (CAEV). She continued her work as a research associate at Washington State University College of Veterinary Medicine, Department of Microbiology and Pathology, until 1995. From 1995 until 1999 she worked in Texas when the first Boer goats were being imported into the United States, where she programmed numerous embryo transfer groups, showed at the early ABGA National shows and maintained an import quarantine facility in compliance with the USDA Animal Welfare Act.

Ms. Carlson is a member of the American Dairy Goat Association (ADGA) where she serves on a number of committees. She has served as Director on the Board of the American Goat Federation (AGF) since 2012, and is a past Director of the American Boer Goat Association (ABGA). She also is on the Dairy Goat Advisory Committee for DHIA West.

Dr. Charlotte Clifford-Rathert is an Assistant Professor in the College of Agriculture and Natural Sciences, Cooperative Extension and Research of Lincoln University in Jefferson City, Missouri. She serves as the State Small Ruminant Specialist. Her focus involves studying embryonic and fetal losses in goats, vegetation control using goats and sheep, and small ruminant management. Currently her projects are funded by USDA and NRCS. She also contributes to the eXtension Goat Industry Community of Practice Leadership Committee. Her goals are to help promote and maintain a market for today's goat and sheep producers and provide educational answers to health questions that goat and sheep producers may have. She is a contributor to the eXtension Goat Community of Practice (www.extension.org/goats).

Dr. Clifford-Rathert received her Bachelor of Science in Animal Science from the University of Nevada, Reno in 1981. She worked in various fields of Agriculture such as small ruminant management, extension, and research before pursuing a Doctor of

Veterinary Medicine from the University of Missouri, Columbia in 1992. She practiced in a mixed animal practice in Central Missouri until joining Lincoln University in November 2007.

Adult Activities (afternoon session): In the afternoon session, participants will break into small-group workshops. There will be a total of fifteen workshops; however, participants will only have time enough to attend three.

The afternoon workshops include:

- *Goat Kidding: plan for success with Ms. Jan Carlson (**1:30 p.m. ONLY**).*
- *Goat Kidding: procedures and obstetrics with Ms. Jan Carlson (**2:30 p.m. ONLY**).*
- *Goat Kid Raising: the cold milk feeding program and other options with Ms. Jan Carlson (**3:30 p.m. ONLY**).*
- *Internal Parasite Control - sustainable internal parasite control program with Dr. Charlotte Clifford-Rathert (**1:30 p.m. ONLY**).*
- *Diseases of Concern during Pregnancy and Kidding – diseases that every producer should know and identify especially those that can be transmitted to humans with Dr. Charlotte Clifford-Rathert (**2:30 p.m. and 3:30 p.m. ONLY**).*
- *Basic Herd Health - herd health program including vaccinations, injection sites, and approved drugs with Dr. Lionel Dawson (**1:30 p.m. and 2:30 p.m. ONLY**).*
- *Nutrition for Health and Production - calculation of energy, protein and feed intake requirements with Dr. Steve Hart (**2:30 p.m. and 3:30 p.m. ONLY**).*
- *Goat Farm Budgeting - basics of budgeting and financial recordkeeping with Mr. Roger Sahs.*
- *Sketching Goats in the Field - basics of how to draw any type of goat in a natural setting with Mr. Ken Williams.*
- *DHI Training - supervisor/tester training for dairy goat producers including scale certification with Ms. Eva Vasquez.*
- *Cheesemaking Overview - basics of cheesemaking with Dr. Steve Zeng.*
- *USDA Government Programs - overview of USDA Natural Resource Conservation Service's work with goats and its cost-sharing program with Mr. Dwight Guy.*
- *Pack Goats - basic goat training as a pack animal and equipment needs with Mr. Dwite Sharp.*
- *Mortality Composting – overview of basic composting techniques and equipment for disposing of goat mortalities moderated by Dr. Roger Merkel.*
- *Fitting and Showing for Youth and Adults - tips and pointers on fitting and show ring etiquette with Mr. Dakota Ash (**this is a half-day afternoon workshop**).*

Fun Tent Youth Activity: Ms. Sheila Stevenson will host a full day of activities for youth ages 5-12 in the Fun Tent. This will allow the parents and older teens to enjoy the workshops knowing that their little ones are having fun in a safe environment.

Registration for the Goat Field Day is ***FREE*** but there is a $10.00 per person charge for the optional lunch of barbecued goat and goat milk ice cream. You can bring your own lunch, if you desire. Regardless of lunch preferences, we ask everyone to pre-register.

Cheesemaking Workshop: Our ever-popular goat milk cheesemaking workshop has been scheduled on Friday, April 25, 2014 (the day before our annual Goat Field Day on April 26). This one-day hands-on workshop will be held in the pilot creamery at Langston University. For the cheesemaking workshop, there is a registration fee of $100.00/person. Only the first 20 registrants will be admitted.

Mortality Composting Workshop: We will hold a workshop on mortality composting, which is scheduled on Friday, April 25, 2014 (the day before our annual Goat Field Day on April 26). This workshop is free but participants are encouraged to pre-register.

For information regarding the cheesemaking workshop, please contact Dr. Steve Zeng at 405-466-6145 or szeng@langston.edu.

For information regarding the mortality composting workshop, please contact Dr. Roger Merkel at 405-466-6134 or rmerkel@langston.edu.

For information regarding the 2014 Goat Field Day, please contact Dr. Terry Gipson at 405-466-6126 or at tgipson@langston.edu.

You can register online for the 2014 Goat Field Day
http://www2.luresext.edu/goats/library/fd2014.html

Adult reg #1

Adult reg #2

Shelia cover

Waiver and release

Youth reg 1

Youth reg 2

Research Spotlight

Supplementation and Carcass Traits.

Spanish (S; 28 to 40 wk of age) and Boer (B; 33 to 46 wk) wethers were used to determine effects of level and length of supplementation on carcass amounts and concentrations of ash, N, water, and fat. The completely randomized experiment had 110 and 108 day periods (PR). Wethers resided on pastures with free-choice alfalfa hay and supplemented with 0.5 or 1.5% BW (SL; DM basis; L and H, respectively) of a pelleted diet (16% CP, 60% TDN). Five S and 6 B were harvested initially, and 12 per breed (BR) and SL after PR 1 and 2. There were BR differences in initial bodyweight (73 and 52 lb), carcass weight (34 and 24 lb) and amounts of ash (1.5 and 1.0 lb), protein (7.7 and 4.9 lb), and fat (7.3 and 4.8 lb) for B and S goats, respectively. On a carcass basis B goats had a lower level of water (51.3 and 55.2%) than S goats. H goats had greater ash (2.1 and 1.9 lb), protein (9.0 and 7.7 lb), and water (28.0 and 25.3 lb) than L goats. H goats in PR2 had greatest amounts of fat (8.9, 8.0, 13.9, and 9.2 lb) for PR1H, PR1L, PR2H, and PR2L, respectively), with corresponding differences in % carcass fat. B goats had greater ash (2.3 and 1.7 lb), water (30.2 and 23.1 lb), and fat (12.7 and 7.3 lb) than S goats. Carcass protein was greater in B goats in PR1 than PR2 and greater than amounts in S goats (10.1, 8.8, 7.4, and 7.0 lb for PR1B, PR2B, PR2S, and PR1S, respectively). Carcass protein percentage was lowest for H goats in PR2 (20.1, 18.8, 16.0, and 16.9%, for PR1B, PR1S, PR2B, and PR2S, respectively). The differences in component amounts are in accord with those seen in carcass weight (52 and 45 lb for H and L; 56 and 41 lb for B and S; 45 and 52 lb for PR 1 and 2, respectively). Supplementation and period led to increased weights of carcass components and B goats accumulated fat in the carcass to a greater extent than S goats.

Merkel, R.C., T.A. Gipson, Z. Wang, and A. L. Goetsch. 2013. Effects of level and length of supplementation on carcass amounts and percentages of ash, N, water, total fat, and energy. J. Anim. Sci. Vol. 91, E-Suppl. 2/J. Dairy Sci. Vol. 96, E-Suppl. 1, p. 365.

Adapting Goats to Electric Fencing.

Forty Boer (B) wethers (150 days of age and 44 lb), 40 B doelings (163 days of age and 49 lb), 33 Spanish (S) wethers (162 days of age and 40 lb), and 42 S doelings (163 days of age and 33 lb) were used to investigate effects of adaptation treatment (AT) on behavior when exposed to barb wire fence with different electric strand treatments. Breeds were divided into 2 sets with 5 groups of 3 to 4 animals. Five 8×12 ft evaluation pens had 1 side with barb wire strands at 12, 22, 32, 42, and 52 inches from the ground. Fence treatments were electrified strands (6 kV) at 6 and 17 (LH), 6 and 9 (LM), 6 (L), 9 (M), and 17 inches (H). After animals experienced exit from evaluation pens without electric strands (NES), AT of different modifications with electric fence strands were imposed 1 time each week for <30 min: wk 1 - 1 strand at 0 kV, wk 2 - LH, wk 3 - LH, and wk 4 - NES for 1 set of each breed (BC and SC); wk 1 - NES, wk 2 - 1 strand at 0 kV, wk 3 - L, and wk 4 - NES for the other set of B (BU); wk 1 - 1 strand at 0 kV, wk 2 - LH, wk 3 - LH, and wk 4 - LH for the other set of S (SU). Based on differences in initial behavior, BU and SU were designed to achieve similar behavior during the experiment, with differences between BC and SC expected. The % of animals exiting pens differed among AT (5.5, 39.9, 60.6, and 0.0% for BC, BU, SC, and SU, respectively) and FT (9.1, 2.8, 15.4, 62.4, and 22.6% for LH, LM, L, H, and M, respectively). Period affected animals shocked without exit (4.2 and 12.6% in period 1 and 2, respectively) and goats exiting with shock (14.5 and 1.3%), but did not affect exit. In conclusion, use of the same AT for B and S resulted in different behavior when later exposed to FT and BU affected pen exit as anticipated. However, SU was highly prohibitive to exit and would not be suitable for a method of evaluating different electric fence strand modifications of barb wire fence for goat containment.

Tsukahara, Y., A. L. Goetsch, T. A. Gipson, J. Hayes, R. Puchala, and T. Sahlu. 2013. Effects of adaptation and meat goat breed in a method to evaluate electric fence additions to barb wire fence for goat containment. J. Anim. Sci. Vol. 91, E-Suppl. 2/J. Dairy Sci. Vol. 96, E-Suppl. 1, p. 612.

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