The year 2008 was a busy year for the Langston Goat Extension program. The goat extension specialists have answered innumerable producer requests for goat production and product information via the telephone, letters and e-mail, have given numerous presentations at several state, regional, national and international goat conferences for potential, novice and veteran goat producers, and have produced a quarterly newsletter. They have also been busy with several major extension activities. These activities include the annual Goat Field Day, Langston Goat Dairy Herd Improvement (DHI) Program, grazing demonstrations, the eighth annual meat buck performance test and various goat workshops on artificial insemination and on internal parasite control.

Goat Field Day

Our annual Goat Field Day was held on Saturday, April 26, 2008. This year’s theme was Innovative and Traditional Goat Marketing. Our featured speakers were Ms. Ellie Winslow who spoke on Nine Steps to Attract More Customers, and Mr. James Jones, who spoke on Feed Market Situation and Outlook. Ms. Ellie Winslow is an author and motivational speaker. Ms. Winslow’s company, Beyond The Sidewalk Marketing, is dedicated to helping rural entrepreneurs form strategies that can make businesses more profitable and fun. Ms. Winslow’s formal education is in English and Biology. However, she has raised many types of livestock and companion animals, including almost 35 years of dairy goats. Ms. Winslow has written two books (Making Money With Goats and Marketing Farm Products). She has also edited an anthology of stories that celebrate country living (Stories From Beyond the Sidewalk). She is a native of California who has lived in most of the Western & Mid Western States. She is currently located in Ontario, Oregon. Mr. James Jones known as “JJ” is the Area Agricultural Economics Specialist for the Southeast District of the Oklahoma Cooperative Extension Service housed in the Pontotoc County Extension office in Ada, OK. JJ was raised on a small cattle and hog farm in southwest Oklahoma. JJ went to Oklahoma State University where he received a Bachelor of Science degree in Animal Science and a Master of Science degree in Agricultural Economics. After graduation he started his career working for the University of Tennessee Agricultural Extension Service as an Area Farm Management Specialist. After ten years working in Tennessee, JJ returned to Oklahoma to work for OSU. JJ is responsible for the planning, implementing and support of the agricultural economics programs for the nineteen county Southeast district. JJ now lives in Roff, OK with his wife and three kids. They operate a small 35 doe Boer goat operation. Ms. Winslow offered a full-afternoon Living Beyond the Sidewalk Short Course entitled Growing Your Rural Business: Attitudes, Marketing Secrets and Methods. Ms. Winslow’s afternoon session received some of the highest evaluations scores and most positive comments of any of the afternoon sessions. Due to health issues, Ms. Sheila Stevenson was not able to supervise the full day activities for youth ages 5-12 in the Fun Tent. Ms. Cheryl Glover and Ms. Shirlene Hurte assumed leadership for the Fun Tent. Some of the activities included baby goat activities, pony rides; pot your own plant, movies, and many others. Youth and interested adults participated in a full-day clipping, fitting, and showing workshop conducted by Ms. Kay Garrett of the Oklahoma Meat Goat Association and a Vo-Ag teacher in Prague, OK. Participants had the opportunity to have hands-on practice of clipping, fitting, and showing a goat. The Oklahoma Goat Producers Association sponsored three contests (Poster, Speech and PowerPoint) during the 2008 Langston University Goat Field Day. There were two age divisions for each contest. Junior division is 12 and under and senior division is 13 to 18. Cash prizes were awarded for 1st, 2nd, and 3rd place for each division and contest. The theme for the poster contest was “What Goats
Mean to Me”. Speech and PowerPoint contestants could have presented their speech on any aspect of the goat industry. The Friday before the Goat Field Day, Dr. Steve Zeng conducted a full-day cheesemaking workshop. There were 23 attendees and Dr. Zeng demonstrated the fabrication of several varieties of goat cheeses. Participants also enjoyed hands-on cheesemaking activities.

In the afternoon session, participants broke into small-group workshops. There were a total of thirteen workshops; however, participants had time enough to attend three. The afternoon workshops included:

- Growing Your Rural Business: Attitudes, Marketing Secrets and Methods with Ms. Ellie Winslow (this was a full afternoon workshop).
- Livestock Marketing with Mr. James Jones
- Basic Goat Husbandry - hoof trimming, injection sites, farm management calendar, disbudding, etc. with Mr. Jerry Hayes.
- Basic Herd Health - herd health program including vaccinations and other approved drugs with Dr. Lionel Dawson.
- Goat Farm Budgeting - basics of budgeting and financial recordkeeping with Mr. Roger Sahs.
- Nutrition for Health and Production - calculation of energy, protein and feed intake requirements with Dr. Steve Hart.
- Introduction to Goat Barbecue - overview of how to prepare goat barbecue with Ms. Gladys Young.
- Internal Parasite Control - sustainable internal parasite control program with Dr. Dave Sparks.
- DHI Training - supervisor/tester training for dairy goat producers including scale certification with Ms. Eva Vasquez.
- USDA Government Programs - overview of USDA Natural Resource Conservation Service’s work with goats and its cost-sharing program with Mr. Dwight Guy.
- Oklahoma Department of Agriculture Services - overview of ODA services for Oklahoma farmers and ranchers with Mr. Justin Whitmore, Mr. Justin Harvey, and Ms. Chris Kirby.
- Body Condition Score as a Management Tool - overview/hands-on of conducting body condition scoring for management use in goat production with Mr. Glenn Detweiler.
- Fitting and Showing for Youth and Adults - tips and pointers on fitting and show ring etiquette with Ms. Kay Garrett (this was a full day workshop).

Attendance at the Goat Field Day continues to remain high. This year 328 people pre-registered, 86 by mail, 23 by phone, and 219 by the web site. Of the 328 pre-registered individuals, 263 actually attended the Goat Field Day. In addition, 93 people registered on-site. A total of 356 participants attended the Goat Field Day. The breakdown of pre-registered participants by state of residence was:

<table>
<thead>
<tr>
<th>State</th>
<th>Pre-registered by mail</th>
<th>Pre-registered by Phone</th>
<th>Pre-registered by web</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IL</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>KS</td>
<td>9</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>KY</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MD</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MO</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>NM</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>OK</td>
<td>70</td>
<td>22</td>
<td>180</td>
</tr>
<tr>
<td>PA</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TX</td>
<td>5</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>86</td>
<td>23</td>
<td>219</td>
</tr>
</tbody>
</table>
Goat DHI Laboratory

The Langston Goat Dairy Herd Improvement (DHI) Program is housed at the dairy farm, west of campus, operates under the umbrella of the Texas DHIA. In February 1998, the Langston DHI program became the first DHI program to introduce forms and reports in goat terminology to dairy goat producers in the United States. A national Dairy Herd Improvement Association (DHIA) has been in existence for a number of years. However, until 1996 DHIA catered only to cow dairies. The Langston DHI program has been very popular with dairy goat producers and has grown significantly since its establishment in 1996. Goat producers are now able to get records for their animals that reflect accurate information with the correct language. Currently we are serving a 29 state area that includes a majority of the eastern states. We have 111 producer herds in these 29 states enrolled in the Langston Goat Dairy DHI Program. In 2008, the DHI laboratory processed ~16,000 samples as compared to 9418 samples 2007. Langston University continues to serve the very small-scale dairy goat producer. The average herds size on test with Langston University is 10 animals. This is significantly smaller than the herd size average for the five other processing centers.

For those interested in becoming a Langston goat DHI tester, training is available either in a formal classroom setting or through a 35-minute video tape. Every tester is required to attend the DHI training session or view the tape and take a test. Upon completion of the DHI training, the milk tester can start performing monthly herd tests.

Goat Newsletter

To date, the Goat Extension program published four issues of the 8-page Goat Newsletter in 2008. Interest in the newsletter has grown and we currently have over 3400 subscribers to our free quarterly Goat Newsletter and the subscription list continues to increase every year. The Goat Newsletter is mailed to every state in the nation and to 10 countries overseas. Ninety-seven percent of the mailings go to American households. At least one newsletter is mailed to a household in every state in the nation. Fifty percent of the newsletters are mailed to Oklahoma households. An additional thirty percent of the newsletters are mailed to households to state adjacent to Oklahoma.

Artificial Insemination Workshop

The use of superior sires is imperative in improving the genetic composition of breeding stock. Artificial insemination has long been used in the dairy cattle industry and is a simple technology that goat producers can acquire. However, opportunities for goat producers to the necessary skills via formal and practical instruction are not widespread. Langston University has instituted a practical workshop for instruction in artificial insemination in goats. Producers are instructed in the anatomy and physiology of the female goat, estrus detection and handling and storage of semen. Producers participate in a hands-on insemination exercise. An understanding of the anatomy and physiology enable the producer to devise seasonal breeding plans and to troubleshoot problem breeders. An understanding of estrus detection enables the producer to effective time inseminations for favorable conditions for conception and to effectively utilize semen. An understanding of semen handling and storage enables the producer to safeguard semen supplies, which can be scarce and costly. The experience of actually inseminating a female goat enables the producer to practice the knowledge that they have gained. The acquisition of these inseminating skill will allow producers the use of genetically superior sires in their herds that they normally would not have access to. It also allows producers to save money by conducting the inseminating themselves instead of hiring an inseminator. In 2008, AI workshops were held in September at the Langston University campus and in October at the county fairgrounds in Antlers.
Meat Goat Production Handbook

The Meat Goat Production Handbook, which is a companion to the Web-based Training and Certification Program, both of which were funded through an USDA/FSIS grant. The 400-plus page Meat Goat Production Handbook is an answer to the paucity of information, especially on the aspect of quality assurance, which will be a key production element as the meat goat industry grows and evolves. A quality assurance program ensures the production of a safe, healthy product that satisfies consumers and increases profit for the production industry. Conventional topics such as herd health, nutrition, herd management, and many others are covered comprehensively, yet remain clear and easy-to-read. Additional topics generally not covered in conventional handbooks are also included, topics such as disaster preparedness, legal issues, and organic meat goat production. Even though Langston University has taken the lead in this project, this handbook is not the product of one person nor of a single university. Our collaborating project institutions/organizations, which include Alcorn State University, American Boer Goat Association, American Meat Goat Association, Florida A&M University, Fort Valley State University, Kentucky State University, Langston University, Prairie View A&M University, Southern University, Tennessee Goat Producers Association, Tennessee State University, Tuskegee University, United States Boer Goat Association, University of Arkansas Pine Bluff, and Virginia State University. Handbook contributing institutions/organizations include Allen Veterinary Clinic, American Boer Goat Association, American Meat Goat Association, BIO-Genics, Ltd., Bountiful Farm, Cornell University, Fort Valley State University, Kentucky State University, Langston University, Law Office of Wheeler and Mueller, Louisiana State University, Louisiana State University AgCenter, NCAT / ATTRA National Sustainable Agriculture Information Service, North Carolina State University, Oklahoma State University, Texas A & M University, United States Boer Goat Association, and Virginia State University.

Controlling Internal Parasites Workshop

Internal parasites (Barberpole worm, *Haemonchus contortus*) is the leading cause of death in goats in the Southern US, accounting for as many deaths as the total of the next three leading causes of death in goats. Several factors contribute to the high mortality caused by internal parasites.

Goats which originated in dry areas where there was no internal parasite challenge have been brought to the humid South where there is great parasite challenge. Only a few animals have good genetic resistance against internal parasites. In addition, goats are forced to graze rather than browse which provides greater opportunity to consume infective larvae and especially so when animals overgraze. Producers are not familiar with monitoring animals for signs of parasitism and do not understand how animals get infected. In addition internal parasites have developed a high level of resistance to dewormers from the overuse of dewormers in goats. To address these concerns, Langston developed a parasite workshop to educate producers about internal parasites. It includes 3 hours of lecture on biology of the parasite, pasture management to avoid worms and monitoring parasite infection using the FAMACHA chart which assesses the degree of anemia. This is a cooperative effort with OSU Extension Veterinarian who addresses dewormer resistance and correct use of dewormers. Producers get hands-on instruction in use of the FAMACHA card, taking fecal samples and running fecal egg counts.

Nutrient Requirements of Goats

Under a research project which developed equations for energy and protein requirements for goats, as well as prediction of feed intake, an extension sub-project developed a website calculation system for “Nutrient Requirements of Goats” (http://www2.lurexst.edu/goats/research/nutreqgoats.html). Most calculators were based on studies of the project reported in a Special Issue of the journal Small Ruminant Research. For calculators with score inputs (i.e., grazing and body conditions), pictures are available to aid in determining most appropriate entries. Realistic examples are given, as well as discussion of appropriate and inappropri-
In 2005, a calculator for calcium and phosphorus requirements was added to the existing calculators for metabolizable energy, metabolizable protein, and feed intake for suckling, growing, mature, lactating, gestating, and Angora goats. Also in 2005, the interface of the calculators was unified into a single calculator with the English measurement system used. This will encourage the use of the calculators by American producers. The least-cost ration balancer was modified so that it incorporates the least-cost feed percentage into the diet. Also, calculators are equipped with printable version commands to obtain inputs and outputs in hard copy format. In 2007, the calculators were continued to be updated.

In summary, for nutrient requirement expressions to be of value, they must be readily accessible and reasonably simple. Therefore, a web-based goat nutrient requirement system was developed based on findings of a recent project. It is hoped that this system will enjoy widespread usage and enhance feeding practices for goats.

**Internet Website**

http://www2.luresext.edu

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 several 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. 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.

**Rehabilitation of Under-Utilized Forest Land by Goats for Economic Benefits**

In 2008, Langston University collaborated with the Oklahoma State University Forest Resources Center located in Idabel, OK to demonstrate that goats can be used to remove woody vegetation and underbrush so that forest land can be constructively and sustainably maintained. Moreover, meat goat production itself is profitable and an enterprise appropriate for smallholders. Besides this, goats can improve soil fertility by release of nutrients sequestered in woody plants. Nonetheless, although use of goats for vegetation management is gaining in popularity, it still is not widely prevalent; in part because of incomplete knowledge and probably more importantly a lack of familiarity with the method. Control of invasive species in forest and rangelands is costly for landowners. Recently, goats have been used as a biological means to control invasive and/or undesirable plant species on rangelands. However, their effectiveness in a forested environment is unknown. Twenty-five mature wether goats were fitted with a GPS collar and released upon the 9-acres study.
Long-Term Retention of Electronic Boluses

With the aim of assessing the influence of breed on electronic bolus retention, 295 goats from 4 breeds were identified with 3 bolus types containing 32 mm HDX transponders. Ruminal pH was used as an indicator to evaluate feeding conditions. Bolus features were: B1 (75 g, 68.2 × 21.0 mm, n = 100), B2 (82 g, 69.1 × 21.2 mm, n = 100) and B3 (20 g, 56.4 × 11.2 mm, n = 95). Distribution of boluses by breed and bolus type (B1, B2, B3) was: Alpine (25, 24, 25), Boer-cross (26, 24, 23), Angora (25, 26, 24) and Spanish (25, 25, 23). Goats were also identified with a standard flag-button plastic ear tag (4.6 g, 51 × 41 mm). Boluses were administered with a balling gun adapted to each bolus type. Time required for bolus administration was recorded as well as any incident observed. An ISO handheld reader was used to read the boluses. Retention rate (read/applied × 100) of boluses and ear tags was recorded at d 1, 7, 30, 60 and 120. Ruminal pH was measured with a portable pH meter, in random samples of 5 goats from each breed and feeding conditions, after bolus administration and at wk 1, 2, 3 and 4. Ruminal fluid was obtained at 2 h after feeding by using an oro-ruminal probe. Time required for bolus administration varied according to bolus type (B1, 24 ± 2 s; B2, 27 ± 2 s; B3, 14 ± 2 s; P < 0.05) and goat breed (Alpine, 34 ± 3 s; Boer-cross, 16 ± 1 s; Angora, 17 ± 2 s; Spanish, 19 ± 2 s; P < 0.05). No health or behavior disturbances were observed. Ruminal pH differed according to breed and feeding conditions (lactating Alpine, 6.50 ± 0.07; yearling Alpine, 6.73 ± 0.08; Boer-cross, 6.62 ± 0.04; Angora, 6.34 ± 0.06; Spanish, 6.32 ± 0.08; P < 0.001) but showed no influence on bolus retention. Only 1 goat regurgitated a B3 bolus when inverted on an operating table during laparoscopy surgery. At 120 d, bolus retention was greater than ear tag retention (99.7 vs. 97.6%; P = 0.07). In conclusion, medium-term bolus retention was not affected by breed and feeding conditions, and remained over the ICAR requirements for official livestock identification (>98%). Long-term bolus and ear tag retention is under study.

Web-based Training for Meat Goat Producers

Meat goat production is one of the fastest growing sectors of the livestock industry in the United States. New producers, as well as some established ones, have an expressed need for current, correct information on how to raise goats and produce safe, wholesome products in demand by the public. As the meat goat industry grows and evolves, a quality assurance program is essential. Such a QA program ensures the production of a wholesome product that satisfies consumers and increases profit for the meat goat industry.

Langston University was awarded funding by the Food Safety and Inspection Service of USDA to develop training and certification for meat goat producers. Langston University organized and led a consortium of 1890 universities and producer associations in this project. The consortium identified the subject topics most pertinent and pressing for the instructional modules. The consortium then identified experts on the selected subject topics and pursued these experts as module authors. These authors represent the most qualified persons in their field in academia as well as in the industry. Langston University translated the sixteen instructional modules into web pages with accompanying images, and pre- and post tests for those producers wishing to pursue certification. All modules are also available in pdf for easy printing and the introductory module is available as a podchapter for downloading and listening on your favorite mp3 player. The web-site (http://www2.luresext.edu/goats/training/qa.html) was unveiled in late 2005.

Even though this web-site (http://www2.luresext.edu/goats/training/qa.html) was only unveiled in 2007, more than 700 producers have enrolled for certification and 93 have completed the certification process. These instructional materials will best serve meat goat producers in assisting them to produce a safe, wholesome, healthy product for the American consumer. Funding source for this project was USDA/FSIS/OPHS project #FSIS-C-10-2004 entitled “Development of a Web-based Training and Certification Program for Meat Goat Producers.”
Breed Association | Number of Members Certified
--- | ---
Alberta Goat Breeder’s Association | 1
American Boer Goat Association | 37
American Kiko Goat Association | 7
American Meat Goat Association | 15
International Boer Goat Association | 1
International Kiko Goat Association | 3
United States Boer Goat Association | 13
None | 35

The table above shows the association affiliations for the 93 certified producers. Please note that certified producers may be a member of more than one association.

### Meat Buck Performance Test

Meat goat production represents the most rapidly growing animal industry in the US today, and is becoming a mainstream livestock enterprise. To further genetic progress through the identification of superior sires in the industry, Langston University and the Oklahoma Meat Goat Association established a meat goat performance test in 1997.

**Entry**

The twelfth annual meat buck performance test started May 3, 2008 with 35 bucks enrolled from 8 different breeders. Geographical distribution is given in the table below.

<table>
<thead>
<tr>
<th>State</th>
<th>Bucks</th>
</tr>
</thead>
<tbody>
<tr>
<td>KS</td>
<td>4</td>
</tr>
<tr>
<td>MO</td>
<td>3</td>
</tr>
<tr>
<td>NE</td>
<td>3</td>
</tr>
<tr>
<td>OK</td>
<td>3</td>
</tr>
<tr>
<td>TX</td>
<td>22</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
</tr>
</tbody>
</table>

Bucks were given a physical examination by Dr. Lionel Dawson, dewormed with Cydectin (moxidectin), deloused with Atroban De-Lice, given a preemptive injection of Nuflor for upper respiratory infections, and those bucks that needed booster or initial vaccinations for enterotoxemia and caseous lymphanginitis. Four weeks after check-in, all bucks were given a booster vaccination for enterotoxemia and caseous lymphanginitis.

Average age in days and entry weight are detailed in the table below.

<table>
<thead>
<tr>
<th>Data</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average of Entry Weight (lbs)</td>
<td>45.4</td>
</tr>
<tr>
<td>Average of Entry Age (days)</td>
<td>92</td>
</tr>
</tbody>
</table>

**Adjustment Period**

The Feed Intake Recording Equipment (FIRE) system was used for all animals. The FIRE system is a completely automated electronic feeding system, which was developed for swine but we have adapted it to goats. Animals wear an electronic eartag, which is read by an antenna in the feeder. The FIRE system automatically records body weight and feed intake. All bucks underwent an adjustment period of two weeks immediately after check-in. During the adjustment period, bucks were acclimated to the test ration and to the FIRE system.
The area immediately around FIRE feeders and waterers is concrete, however, the large majority of the inside pen is earth and is covered by pine shavings. Pine shavings were periodically added as needed to maintain fresh bedding. Bucks had free access to water provided by float-valve raised waterers. Whenever the weather was permitting, the bucks had access to the outside pens as well as the inside pens.

This year we were fortunate to hire a second year veterinary student from Oklahoma State University, Ms. Madeline Deatherage. Madeline has done a wonderful job with the bucks.

**Ration**

Nutritionists at Langston University formulated the following ration. In 1999, the amount of salt and ammonium chloride was doubled due to problems with urinary calculi the previous year. Except for the increase in salt and ammonium chloride, the ration was unchanged from that which was used in the first two meat buck performance tests. The ration was fed free-choice during the adjustment period and during the 12-week test.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percentage (as fed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cottonseed hulls</td>
<td>29.07%</td>
</tr>
<tr>
<td>Alfalfa meal</td>
<td>19.98%</td>
</tr>
<tr>
<td>Cottonseed meal</td>
<td>15.99%</td>
</tr>
<tr>
<td>Ground corn</td>
<td>15.99%</td>
</tr>
<tr>
<td>Wheat midds</td>
<td>9.99%</td>
</tr>
<tr>
<td>Pellet Partner (binder)</td>
<td>5.00%</td>
</tr>
<tr>
<td>Ammonium chloride</td>
<td>1.00%</td>
</tr>
<tr>
<td>Yeast</td>
<td>1.00%</td>
</tr>
<tr>
<td>Calcium Carbonate</td>
<td>0.95%</td>
</tr>
<tr>
<td>Salt</td>
<td>0.50%</td>
</tr>
<tr>
<td>Trace mineral salt</td>
<td>0.50%</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>0.02%</td>
</tr>
<tr>
<td>Rumensin</td>
<td>0.01%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

The crude protein content of the ration is 16% with 2.5% fat, 20.4% fiber and 60.6% TDN. Calcium phosphorus and sodium levels are .74%, .37% and 1.07%, respectively. Zinc concentration is 33.04 ppm, copper is 17.15 ppm and selenium is .21 ppm. In 2003, competitive bids were sought for the buck-test feed and Bluebonnet Feeds of Ardmore, OK was awarded the contract to supply feed for the buck performance test for 2003, 2004, 2005, 2006, 2007, and 2008.

**ABGA Approved Performance Test**

In early 2000, the Oklahoma performance test was designated by the American Boer Goat Association Board of Directors as an ABGA Approved Performance Test. Qualified fullblood or purebred Boer bucks will be eligible to earn points towards entry into the “Ennobled Herd Book”. Candidate bucks must pass a pre-performance test inspection conducted by one (1) or more ABGA approved breeders. Ten (10) points will be awarded a Boer buck who shows an average daily weight gain (ADG) in the top five percent (5%) of the animals on test. Five (5) points will be awarded a Boer buck who shows an average daily weight gain (ADG) in the next fifteen percent (15%) of the animals on test. All bucks must gain at least three-tenths (.3) pounds per day to be awarded any points.

**International Boer Goat Association, Inc. Sanctioned Test**

In 2003, the Oklahoma buck performance test was sanctioned by the International Boer Goat Association, Inc.
Gain

The official performance test started on May 21 after the adjustment period was finished. Weights at the beginning of the test averaged 51 lbs with a range of 32 to 84 lbs. Weights at the end of the test averaged 97 lbs with a range of 65 to 139 lbs. **Weight gain for the test averaged 47 lbs with a range of 29 to 63 lbs.**

**Average Daily Gain (ADG)**

For the test, the bucks gained on averaged 0.55 lbs/day with a range of 0.35 lbs/day to 0.75 lbs/day.

**Feed Efficiency (Feed Conversion Ratio)**

For the test, the bucks consumed an average of 296 lbs of feed with a range of 180 to 449 lbs.

For the test, the bucks averaged a feed efficiency of 6.48 (feed efficiency is defined as the number of lbs. of feed needed for one lbs. of gain), with a range of 3.75 to 10.56.

**Muscling**

The average loin eye area as determined by ultrasonography was 1.79 square inches with a range of 1.05 to 2.48 square inches and the average left rear leg circumference was 14.1 inches with a range of 11.0 to 17.0 inches.

**Index**

For 2008, the index was calculated using the following parameters:

- 30% on efficiency (units of feed per units of gain)
- 30% on average daily gain
- 20% on area of longissimus muscle (loin) at the first lumbar site as measured by real time ultrasound adjusted by the goat’s metabolic body weight:
  \[
  \text{area of longissimus muscle (loin)} / \text{BW}^{0.75} 
  \]
- 20% circumference around the widest part of the hind left leg as measured with a tailor’s tape adjusted by the goat’s metabolic body weight:
  \[
  \text{circumference of hind left leg} / \text{BW}^{0.75} 
  \]

The adjustment to metabolic body weight gives lighter weight goats a fair comparison of muscling to heavier goats.

The deviation from the average of the parameters measured from the goats in the performance test was used in the index calculation. Thus, the average index score for bucks on-test was 100%. Bucks that are above average have indices above 100% and those below average have index scores below 100%.
**Congratulations**

The Oklahoma Meat Goat Association and the Agricultural Research and Extension Program at Langston University congratulate:

- Ms. Jessica Stephens of Elm Creek, NE
  for having the Top-Indexing buck
  in the 2008 Oklahoma Meat Buck Performance Test

Also, deserving congratulations are:

- Mr. Sam Stephens of Elm Creek, NE
  for having the #1 Fastest-Gaining buck
- Ms. Jessica Stephens of Elm Creek, NE
  for having the #2 Fastest-Gaining buck
- Mr. Orlin Scrivener of Cabool, MO
  for having the #3 Fastest-Gaining buck
- Mr. Sam Stephens of Elm Creek, NE
  for having the #4 (tie) Fastest-Gaining buck
- Mr. Martin Peters of Barksdale, TX
  for having the #4 (tie) Fastest-Gaining buck
- Mr. Marvin Shurley of Sonora, TX
  for having the Most-Feed-Efficient buck
- Mr. Marvin Shurley of Sonora, TX
  for having the Most-Heavily-Muscled buck

**Acknowledgments**

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**2008 World Cheese Championship Contest**

Dr. Steve Zeng, Associate Professor/Dairy Product Specialist, was invited as an Official Judge to the 2008 World Cheese Championship in Madison, WI during March 9-14, 2008. It was his first time to be invited in this world prestigious cheese event and he was the only professor from 1890 Land Grant University ever participated. During the world championship, 1941 cheese entries were judged. In all, 79 classes of cheese varieties were presented. Among them were more than two hundred goat and sheep milk cheeses. As a judge, Dr. Zeng was able to taste and judge many varieties of cheeses from all over the world (actually 21 nations). He was totally impressed how good the overall quality of all the cheeses was. He was further assured that goat milk cheese is not only getting popular as a specialty cheese but also it is becoming a favorite cheese to American consumers, especially in the northern states, the east and west coasts. This cheese contest enhanced his knowledge in cheese judging as career development and more importantly gave a chance for him to represent the E. (Kika) de la Garza American Institute for Goat Research and Langston University at a national/international stage. In the end, professors and industry leaders in this championship got better understanding and knowledge about our goat research and extension programs at Langston University.
Goat Cheese Making Workshop in Republic, MO

Dr. Steve Zeng, our Dairy Product Specialist, was invited to conduct a goat cheesemaking workshop in Republic, MO April 4-5, 2008. The workshop was co-sponsored by the Southwest Missouri Dairy Goat Association and the E. (Kika) de la Garza American Dairy Goat Association. Twenty goat producers attended the event. Obviously there is a lot interest in goat cheese making in the southwestern part of Missouri and Langston University is taking an active role in helping disseminate technical information to the producers. A variety of cheeses were fabricated during this hands-on workshop. Soft cheeses (Chevrè and cream cheese), a semi-hard cheese (Mozzarella) and a hard cheese (Colby) were demonstrated from milk pasteurization, fermentation, coagulation, cooking, to cheese aging. There were a plenty of questions and discussions during the event. Participants not only learnt basic principles and practical techniques, but also had some cheeses to take home for continuous ripening and tasting. The participants now know more about our goat programs in research and extension and some producers are exploring opportunities for commercial goat cheese operations.

Cheese Demo Live in the Oklahoma State Fair

Dr. Steve Zeng, Associate Professor/Dairy Product Specialist, was invited to conduct a Cheese Demo Live in the Oklahoma State Fair on September 17, 2008. This Cheese Demo Live was a first ever in the history of the fair and rightfully fitted in as a creative event in the Creative Arts and Handcrafts Building. Dr. Zeng demonstrated the basic cheese making principles, skills and techniques to diversified audiences. He used Nubian goat milk from Foremost Registered Goats in Edmond and made several batches of Colby cheese, our very own American type, LIVE! A huge turnout was present and was certainly much greater than anticipated. During the show, cow cheeses (seven varieties from Christian’s Cheese in Kingfisher) and goat cheeses (several varieties from Pure Prairie Creamery in Ada and from the Langston University Pilot Creamery) were samples by hundreds of show-attendees and fair-spectators. In the end, all the fresh cheese made in the show were tasted and evaluated. This show raised the public’s awareness of cheese in general and goat milk cheese in particular. For many it was their first time to see and actually taste goat cheeses. It was truly a showcase of made-in-Oklahoma cheeses. This Cheese Demo Live was a big success and it is being planned for another one in 2009. More cheese makers are expected to participate in future events.