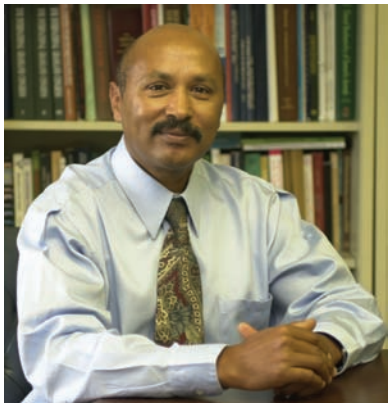
Goat Newsletter

Cooperative Extension Program
Langston University

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

From the Director's Desk



As many of you know, the Annual Goat Field Day was a big success again. This event is often noted by Dr. **Terry Gipson**, who plans and manages the event, to be the "cornerstone" of our extension program. The field day is immediately followed by other important extension activities, including the Annual Meat Goat Buck Performance Test and internal parasite workshops. Drs. **Steve Hart**, **Gipson**, and **Lionel Dawson** lead the buck performance test and Dr. **Hart** is conducting the internal parasite workshops this year. As Dr. **Gipson** has had increases in research and international activities recently, Dr. **Hart** has increased his extension contributions considerably.

In each newsletter we list some of the recent travels of the faculty and staff. There are also many visits to the Institute that do not always get mentioned. As an example, recently Dr. **Brou Kouakou** and two laboratory technicians of Fort Valley State University in Georgia were here for about a 1-week period, which culminated with attendance at the field day. Dr. **Kouakou** is a collaborator on one of the grazing projects ("Characterization of the Energy Requirement for Activity by Grazing Ruminants," supported by the USDA 1890 Institution Research Capacity Building Grant Program) and gained some experience in use of some of the methodologies of these experiments, such as use of heart rate to estimate the amount of energy expended in the act of grazing and GPS collars to estimate distance traveled. He will be conducting a companion experiment at his institution as a part of the project. The technicians received training in various laboratory assays from Mr. **Kesete Tesfai**, Laboratory Coordinator for the Institute. In the last 2 weeks of May, Dr. **Khaled Al-Qudah** received training in animal health care on a short-term visit supported by The World Bank. Dr. **Al-Qudah** is from Jordan University of Science and Technology and is a collaborator on the USAID Middle East Regional Cooperation (MERC) Program-supported project "Multinational Approaches to Enhance Goat Production in the Middle East." Major personnel providing this training included Mr. **Erick Loetz**, Research Farm Manager, Dr. **Lionel Dawson** of Oklahoma State University and Langston University, and Dr. **Charles Streeter** of Oklahoma State University. In mid-June, Dr. **Badapatti**, Chief Veterinary Officer of India, visited the Institute as part of the training period supported by the Norman E. Borlaug International Agricultural Science and Technology Fellows Program. There will be people visiting the Institute in conjunction with the national meetings in July of the American Society of Animal Science and American Dairy Science Association, which frequently occurs. This year visitors are Dr. **Jun Luo** of Northwest Agriculture and Forestry University in China and Dr. **Arieh Brosh** of the Newe Ya'ar Research Center

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Dr. Terry A. Gipson

of the Agricultural Research Organization in Israel. You may recall that Dr. **Luo** has previously spent two periods of time with us as a Visiting Scholar and presently is a collaborator on the USDA International Science and Education Competitive Grant Program-supported project "International Collaboration in Goat Research and Production Web-Based Decision Support Aids." Dr. **Brosh** is a collaborator on the project "Energy Expenditure for Activity in Free-Ranging Ruminants: A Nutritional Frontier," which is supported by the United States - Israel Binational Agricultural Research and Development Fund. Similar research of this project is being conducted with goats at the Institute and cattle in Israel. The overall objective of this and the previously mentioned grazing project is to develop simple means of predicting the amount of energy ruminants use in the activity of grazing.

As was mentioned earlier, Dr. **Hart** has been busy with workshops on internal parasite control and usually finishes those workshops in early summer. Our Extension philosophy is "just in time knowledge", which means that participants are able to immediately put to use the knowledge that they gained in our workshops.

The next set of just-in-time-knowledge workshops will be our artificial insemination workshops. These workshops are planned just prior to the natural breeding season and, like the internal parasite workshops, are held in various locations around the state. The dates and locations of the artificial insemination workshops are:

Date	Location
September 8,	Langston
October 6	Tahlequah
October 20	Antlers

If you are interested in attending one of these workshops, please contact Dr. **Gipson** or you can download one of the registration forms from our web site.

Also on the Extension front, we are very pleased with the response that we have had from producers who have enrolled and have become certified goat producers. You can see the growing list of certified producers on our web site and you too can enroll in our online course and become a certified goat producer. While you are on the web site, you can check out the newly published Meat Goat Production Handbook. The handbook is 400+ pages of valuable information covering traditional topics such as herd health, diseases, and nutrition but also such topics as disaster preparedness, legal issues, and livestock guardian dogs. Order you handbook today.

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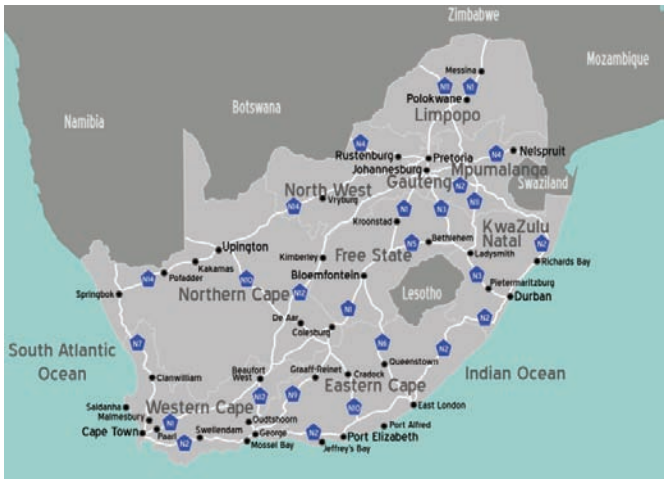
Journey into the Land of Boers

by T.A. Gipson



For most of us in the goat world, South Africa is a mysterious, far-away, and fascinating place full of fat, beautiful Boer goats. We believe this to be true because of the Boer goats we have seen and raised here in the United States and because of the photos that we have seen of Boer goats in their native South Africa. Well, I can tell you today that the mental image that we have of South Africa is indeed true and that South Africa is much more than our simple mind's-eye picture. South Africa is a land of exquisite landscapes, gracious farmers, amazing livestock breeds and rugby. Let me tell you more.

You see, I had the fortunate opportunity recently to spend three wonderful weeks traveling in the homeland of the Boer goat. Mr. Jerry Hayes, our assistant farm manager and live animal appraiser extraordinaire, and I went to South Africa to select and purchase Boer goats and Dorper sheep for our Ethiopia Sheep and Goat Productivity Improvement Project (ESGPIP), which is supported by USAID funding. We have highlighted the ESGPIP in past newsletters and will continue to do so in future newsletters.

Jerry and I left Oklahoma on May 1 and after 27 hours of travel arrived at OR Tambo International Airport. The Johannesburg International Airport was renamed in October 2006 after Oliver Tambo, the former President of the African National Congress. We were met in Joberg, as the locals like to call it, by Mr. Charl Hunlun of SA Studbook. I had been communicating with Charl by email for several months as SA Studbook had agreed to act as the clearinghouse for the financial transactions associated with the purchase, pre-shipment quarantine and testing, and shipping arrangements of the goats and sheep while in South Africa. SA Studbook is a parastatal organization responsible for breed registry recording of most of the livestock in South Africa. SA Studbook, which was established in 1905, works closely with more than 60 livestock breed associations and with governmental research organizations.

Charl amicably and wisely offered to fly up from Bloemfontein, home of SA Studbook and capital of the Free State, to meet us in Joberg, and to escort us around the sites of interest in the Joberg/Pretoria area. More importantly, he drove the rental car for the first several days. This was greatly appreciated because in South Africa, they drive from the wrong side of the car and on the wrong side of the road. Jerry and I quickly adapted to driving on the left side of the road. That driving changeover was aided by having the steering wheel on the right side of the car and, more importantly, by constant vigilance. However, our never-ending frustration was getting into the car; half of the time the driver would end up on the passenger side or vice versa. Needless to say at that point in time, the keys were passed and the "passenger" quickly became the driver. We logged more than

These cars are driving on the wrong side of the road!

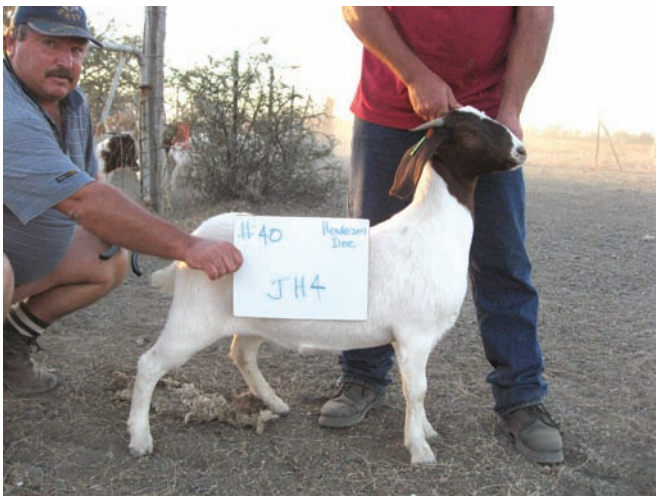
Charl Hunlun, Quinton Campbell, and Terry Gipson (left to right).

5,000 kilometers in the rental car without incident other than the one just previously mentioned.

Before beginning our goat and sheep buying odyssey, we met with Dr. Quinton Campbell, noted livestock researcher, in Bloemfontein and discussed the evolution of the goat and sheep industry in South Africa. Dr. Campbell wrote an article entitled "The development of a meat producing goat in South Africa," which is regarded as the most authentic history of the Boer goat. Although an octogenarian, Dr. Campbell still is very active. "You'll have to speak a little loud," Dr. Campbell said at our meeting, "I was shooting my hunting rifle and am a little deaf". Just the week before, Dr. Campbell was one of the judges at the 2007 Boer Goat World Championships in Upington, South Africa.

After selecting a few Dorper sheep in the Bloemfontein area, we headed into the Great Karoo, which is a 400,000 square kilometer semi-desert region of central South Africa. We were headed to Jansenville and, more importantly, to the home of Mr. Sakkie Nell but first we stopped in Middelburg, location of the home offices of the Boer Goat Breeders' Association of South Africa and the Dorper Sheep Breeders Society of South Africa. In Middelburg, we met with Mrs. Michelle Kruger, executive secretary for the Boer Goat Association, and with Mrs. Charlotte Milne, executive secretary for the Dorper Sheep Society. Mrs. Kruger and Mrs. Milne were instrumental in arranging farm visits for us.

In Jansenville, we met Sakkie, a Boer Goat producer who was our organizer for the six Boer goat breeders in the Eastern Cape. We had called and made arrangements to meet Sakkie on a gravel road near his ranch. After introductions, Sakkie said "follow me" and jumped into his small Isuzu pickup truck or "bakkie" as they are called in South Africa. We struggled to keep up with Sakkie on his bumpy and rutted ranch road. I began to wonder what part of the rental car was going to fall off and how I would explain it to the rental car company. After selecting males and females on Sakkie's ranch, Sakkie looked at our rental car and said "I think that you had better ride with me. We have some rough roads." Happily, Jerry and I jumped into Sakkie's bakkie and left the rental car in the shade of a tree. Yes, we did indeed travel over some very rough roads but we saw incredible country and met even more incredible people. The dominate plant species in that part of the Eastern Cape is a succulent (Sweet Noor, *Euphorbia coerulescens*), which is about five feet tall, very thick and protected by very sharp thorns. Jerry and I could not see how the goats could survive with all the abundant cactus. Sakkie said, "We use it in a drought. We have a blade on the back of a tractor and back into the cactus. The sap has a very hot (spicy) curry taste, although the goats don't seem to mind and in fact, love it." Jerry and I thought for awhile and Sakkie then added "Want to try?" "Sure, why not" was our quick reply. Sakkie took out his pocket knife and cut off the top of one of the nearby cacti. The milky, white sap oozed from the cut. Jerry and I touched our finger to the sap at then to our tongues. "Spicy,



Sakkie Nell (left) hold the sign board for one of Johnny Henderson's selected does.

no way" we both said. So, we went back a second time for a bigger glob of sap. Still no problem. "It takes some time", Sakkie said. He was right, about an hour later both of our throats felt like they were being burned by some super-hot, toxic salsa. So, if you are visiting Sakkie and he tell you that the cactus sap tastes like hot curry, just nod appreciably.

Sakkie's father raised Boer goats and in fact was one of the early Boer goat breeders. Sakkie informed us that the very first stud (breeder) number started at 101 in the development of the Boer breed. His father's stud number was 106. Sakkie inherited the stud number from his father and was very proud of his family's long history with the Boer goat. In fact, Sakkie has several brothers and they all farm close by. At the end of one very rough road that had nine farm gates to open and two creeks to cross, we arrived at the ranch of one of Sakkie's brothers, Vaaitjie Nell. Vaaitjie's ranch was the last stop for the day and in typical South African farmer hospitality, Vaaitjie invited us in for coffee, tea, or something cold to drink. While chatting, Vaaitjie asked "Do you like biltong?" I responded "I know what biltong is but I have never tried it.". Biltong is a spiced dried meat typically made from raw beef or wild game strips. Vaaitjie produced some kudu biltong that we greedily ate and then sent us home with a small bag of kudu biltong. On other occasions, we also ate springbok and wildebeest biltong and it was all delicious.

Who is evaluating whom?

Unfortunately, we received so much biltong during our visit that we had to leave some in South Africa, as USDA will not allow meat products to be carried into the United States.

Leaving the Eastern Cape, we drove north to Kenhardt in the Northern Cape. There, we attended the DorperLand Show and met Mr. Ernest Connan, a noted Dorper sheep breeder. Ernest made an announcement on our behalf to the exhibitors and we easily made arrangements to visit Dorper breeders the next week. Jerry and I had a free weekend and Ernest graciously invited us to spend the weekend at his ranch near Kenhardt. Ernest and his wife, Marianna, were wonderful hosts.

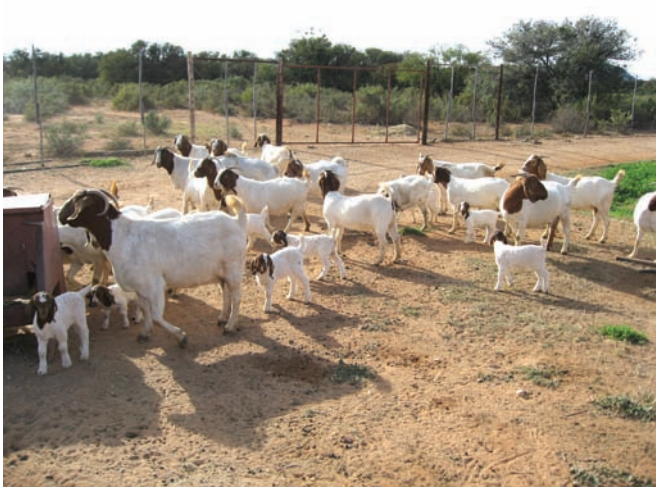
The first night we were at the Connan's, Marianna prepared an oven-roasted leg of lamb, Dorper, of course, which was the best leg of lamb that I have ever tasted. Jerry and I feasted that night. Ernest commented that "This is what we call 365 because after eating beef for awhile we are always ready to go back to lamb. We can eat it 365 days a year." Jerry and I had to agree. If we had lamb prepared like this, then we too could eat it 365 days a year. That weekend, we would be treated to lamb chops and another leg of lamb, all done on the grill or "brai" as the South Africans like to say. Jerry and I spent a most enjoyable weekend at the Connans, discussing American and South African politics, livestock production, life on the farm, and other numerous topics. One interesting piece of information that emerged was that Marianna's father was the late Theunis Botha of Somerset East in the Eastern Cape. Theunis Botha, along with Theunis Jordaan, were the pioneer breeders of the Boer goat.

South Africans, especially those in the Afrikaans-speaking farming communities, are rugby crazy. Our trip happened to coincide with the semi-final and final games of the Super 14 and the South African nation was glued to their television sets for two consecutive weekends. Super 14 is the largest rugby union tournament in the southern hemisphere and consist of 14 provincial teams from Australia, New Zealand, and South Africa. The second weekend of our trip was the semi-finals and the Sharks from Durban beat the Blues from New Zealand. The Bulls from Pretoria played in the other semi-final and trounced the Crusaders, also from New Zealand. Not only was this was the first time in Super 14 history that any South African team had made the finals but in fact, two South African teams were playing against each

other for the 2007 championship. That week, every Boer and Dorper breeder we visited talked about the upcoming game. Due to their livestock proclivity, the breeders were avid Bulls fans. Thanks to Ernest Connan, I was able to understand a minute part of the rules and strategy of rugby and was slightly more informed for the championship game. The Sharks dominated and lead the entire the championship game but somehow, the Bulls were able to score and win the championship after time had run out. Maybe I don't understand rugby at all.

In all, we selected 100 Boer does and 20 Boer bucks from the following Boer breeders in the Eastern Cape and Northern Cape: John Henderson, Kobus Lötter, Sakkie Nell, Vaaitjie Nell, Leonard Du Raan, Oubaas Slabbert, Gerhard Stander, Peet Swiegers, Francis Williamson, and AC Youngberg. We also selected 123 Dorper ewes and 19 Dorper rams from the following Dorper breeders in the Free State and Northern Cape: Divvie Barnard, Deon Barnard, Francois Botha, Pilla Buyes, Wicus Cronje, Ben Grobbelaar, Leon van Niekerk, Dirk Steenkamp, and Charl Strauss.

As Jerry and I left South Africa, these Boer goats and Dorper sheep were being transported to Brits, a town just west of Pretoria, where they will be held in a South African government approved quarantine facility. They will be tested for several diseases, vaccinated, and await shipment to Ethiopia. In early July, they will arrive in Ethiopia and will remain in a government quarantine facility for one month before being moved to nucleus breeding sites. In future newsletters, I or a member of the Langston technical team will give you more details about these animals or about other aspects of the ESGPIP.



Does and kids in the Eastern cape.

Cheese Judging

Dr. Steve Zeng, our Dairy Product Specialist/Associate Professor at the E (Kika) de la Garza American Institute for Goat Research, was invited as an Official Judge to the 2007 United States Cheese Championship in Milwaukee, WI March 11-14, 2007. The judge panel consisted of 12 university professors and industry experts. It was the first time that a professor from an 1890 Land Grant university/college such as Langston University has been invited to participate in this national prestigious cheese contest. During this championship, a total of 1,158 cheese entries were presented. In all, 53 classes of cheese varieties were judged. Among them were 89 goat milk cheese entries along with 10 sheep milk cheeses. Goat cheese entries were put into five classes: plain soft cheese, flavored soft cheese, semi-soft cheese, hard cheese and mixed milk cheese.

As an official judge, Dr. Zeng was able to taste and judge many varieties of cheeses from all over the nation. He was totally impressed how good the overall quality of all the cheeses was and believed that the U.S. cheese industry has established its own identity. In addition, all the judges were optimistic that goat milk cheese is not only getting popular as a specialty cheese but also becoming a favorite cheese to American consumers, especially in the northern states, the east and west coasts.

As a goat cheese enthusiast, Dr. Zeng encourages goat cheese makers to actively participate in similar national and regional competitions. Dr. Zeng says "Submit your cheese entries to the contests and take a full advantage these contests have to offer. If you are an experienced cheese maker and have a potential award-winning cheese, the competition will validate the quality of your cheese and expend market for you. It's like a 'free' national advertisement. If you are a new cheese maker, you will get some expert advice as you will receive judges' original Score Cards and specific comments on cheese defects and can improve the overall quality of your cheese in the future."

Research Spotlight

Abstracted by A. Goetsch

Energy Expenditure.

The maintenance energy requirement (ME_m) accounts for a considerable portion of total feed needs of ruminants. ME_m can be influenced by low planes of nutrition, and periods of low nutrient intake are common in ruminant production systems throughout the world. In order to accurately describe ME_m of goats, it is necessary to gain a more complete understanding of the effects of level of feed intake. Therefore, this experiment was conducted to determine: to what degree meat goats can decrease energy expenditure (EE; i.e., heat production) to minimize loss or maintain body energy, how rapidly and in what fashion does EE change after decreases in metabolizable energy (ME) intake of different magnitudes and how rapidly and in what manner does EE rise after an increase in MEI. Eleven yearling meat goat wethers (7/8 Boer and 1/8 Spanish) were fed alfalfa pellets in the 16-week trial. During the first 4 weeks for adaptation, wethers were fed near maintenance. In weeks 5 to 10, six wethers were fed at approximately 60% of the maintenance level and in weeks 11 to 16 were again fed near maintenance (L-H). The other five wethers were fed at approximately 80 and 60% of maintenance in weeks 5 to 10 and 11 to 16, respectively (M-L). Body weight differed among weeks but not between treatments. In conclusion, meat goats can markedly reduce EE in response to limited feed intake, with nonlinear change as time advances. These findings suggest that the current NRC recommendation of a maximal reduction in MEm of 20% with restricted feed intake should be greater.

Asmare, A., R. Puchala, R. C. Merkel, T. Sahlu, T., and A. L. Goetsch. 2006. Change in energy expenditure by meat goats with varying levels of feed intake near maintenance and below. Journal of Applied Animal Research 29:81-89.

Automated Feeding Systems.

Automated feeding systems for livestock are now available. Such equipment offers many opportunities for genetic evaluations, such as central sire performance tests, and nutritional investigations with minimal labor. However, automated feeding systems have not yet received a great deal of attention with goats. There may be special utility of use of automated feeders with goats because of their social nature, which could impact appropriateness of extrapolation of findings with individual housing to group settings. But, in order to use automated feeding systems, it is first necessary to know optimal numbers of animals per feeder. Therefore, objectives of this experiment were to determine effects of the number of growing Boer crossbred wethers per automated feed intake system on feed intake, feeding behavior and growth performance. Thirty-six growing Boer x Spanish wethers (initial body weight of 66 lbs) were used in an 82-day experiment, being exposed to different numbers of animals per automated feeding system (NPF; 6, 8, 10 and 12). The system allows consumption by only one animal at a given time. During the entire experiment dry matter (DM) intake (3.2, 3.3, 3.5 and 3.0 lbs/day) and average daily gain (ADG) (0.34, 0.37, 0.40 and 0.30 lb/day for 6, 8, 10 and 12 NPF, respectively) were affected by NPF quadratically (i.e., curvilinear change), although gain efficiency (ADG:DM intake) was similar among NPF. Feeder occupancy per day (97.8, 73.2, 83.0 and 71.7 min), visit (5.8, 4.4, 5.0 and 3.8 min) and meal (11.2, 8.2, 9.2 and 8.1 min for 6, 8, 10 and 12 NPF, respectively) decreased linearly with increasing NPF. In conclusion, 8 and 10 growing Boer crossbred wethers per automated feeder resulted in growth performance greater than for 12 wethers, apparently due primarily to limited feed intake by 12 wethers.

Gipson, T. A., A. L. Goetsch, T. A. Gipson, G. Detweiler, R. C. Merkel, and T. Sahlu. 2006. Effects of the number of yearling Boer crossbred wethers per automated feeding system unit on feed intake, feeding behavior and growth performance. Small Ruminant Research 65:161-169.

Noteworthy News

In February, Drs. **Art Goetsch** and **Roger Merkel** traveled to Ethiopia to work on the ESGPIP.

In March, Drs. **Terry Gipson** and **Art Goetsch** traveled to Abdijan, Ivory Coast to work on the USDA International Science and Education Competitive Grant Program-supported project "International Collaboration in Goat Research and Production Web-Based Decision Support Aids" with collaborators from the Centre National de Recherche Agronomique.

In May, Dr. **Roger Merkel** traveled to South Carolina to participate in a conference entitled "Mobilizing Against Threats to Community Health".

In May, Drs. **Art Goetsch** and **Tilahun Sahlu** traveled to Ethiopia to work on the ESGPIP.

In May, Dr. **Steve Hart** traveled to Virginia Tech to participate in a conference entitled "Southern Consortium for Small Ruminant Parasite Control". The conference addressed the current state of parasite control, future research, and alternative control methods in small ruminants.

In May, Dr. **Terry Gipson** and Mr. **Jerry Hayes** traveled to South Africa to select animals for the ESGPIP (see page 3 for trip details).

In June, Drs. **Marvin Burns**, **Tilahun Sahlu**, and **Steve Zeng** traveled to China to sign a memorandum of understanding with China Agricultural University in Beijing.

In June, Dr. **Steve Hart** conducted workshops/presentations on internal parasite control in Atoka, Pryor, and Wilburton, OK.

In June, Drs. **Lionel Dawson**, **Terry Gipson** and **Roger Merkel**, and Mr. Jerry Hayes traveled to Ethiopia to work on the ESGPIP.

In June , Dr. **Steve Hart** gave a presentation on parasite control at the OSU Goat Boot Camp in Ada, OK.

In June, Dr. **Steve Hart** traveled to Wilmington, OH to give a presentation on nutrition to Professional Meat Symposium host by The Ohio State University Cooperative Extension.

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