International Overview

Roger Merkel

International Program Leader

The American Institute for Goat Research of Langston University has been very active in international activities during the past year. Brief synopses of the major international grant activities are given below. Institute staff also have written or collaborated on several grant proposals that have been submitted to expand the Institute’s international program. Additionally, during the past year Langston University hosted and trained personnel from the Democratic People’s Republic of Korea on dairy goat production and dairy goat milk products and safety.

Institutional Partnerships with Ethiopian Universities

Langston University is continuing its partnerships with two universities in Ethiopia, Debub University in Awassa located in southern Ethiopia and Alemaya University near Dire Dawa in eastern Ethiopia. Activities during the past year centered around visits by Langston University personnel to Ethiopia and an artificial insemination program begun at both universities. In June 2004, Drs. Terry Gipson and Lionel Dawson traveled to Ethiopia to present seminars and training at both universities. Dr. Gipson spoke on computer simulation models, statistical analysis, and gave an overview of the goat nutrient calculators available on our website. Dr. Dawson presented seminars on goat health and disease, the veterinary program at Oklahoma State University, and also taught Ethiopian personnel how to perform an epididymectomy, or the making of a teaser buck. Drs. Gipson and Dawson also visited some of the women’s groups for goat production established as part of project activities.

A goal of the current partnerships with these Ethiopian universities was to collect and ship Boer goat semen to Ethiopia for use in a crossbreeding program, with crossbred goats given to women cooperating in the village goat groups. Over 2,500 straws of Boer goat semen were collected from Langston University bucks and shipped to Ethiopia in May 2004. Dr. Roger Merkel then traveled to Ethiopia where he was met by Teresa and Don Wade, owners of Bio-Genics Ltd., a firm that specializes in collecting and freezing goat semen, goat artificial insemination, and conducting artificial insemination workshops. Teresa and Don Wade donated their time to travel to Ethiopia and teach staff and students at each university how to preform artificial inseminations. Roughly 45 animals at each university were inseminated. Over a dozen crossbred kids were born at Debub University while very few were born at Alemaya. The does inseminated at Alemaya were purchased from local markets for the insemination. Unfortunately, many of them were pregnant when purchased and aborted during the estrus synchronization protocol used to prepare the animals. However, several people at both universities became proficient in insemination and will be able to continue using the remaining semen.

In addition to teaching artificial insemination at both universities, the Wade’s also taught the basics of goat semen freezing to personnel at the National Artificial Insemination Center of Ethiopia. The training received by the center was timely in the fact that the center had recently been given the mandate of beginning an artificial insemination program for goats. Center personnel were very appreciative of the training they received and the Institute hopes to have further collaborative activities with the National Artificial Insemination Center.
A final aspect of these institutional partnerships completed in the past year was the training of a scientist from Alemany University, Dr. Asefa Asmare. Dr. Asefa arrived at Langston University in April 2004 and returned to Ethiopia last October. During his time here, Dr. Asefa conducted several research projects and assisted several other scientists in their research trials. Dr. Asefa participated in the annual meeting of the American Society of Animal Science. He, along with Dr. Merkel, and gave a progress report on partnership activities at the annual conference of the Association Liaison Office for University Cooperation in Development in Washington DC. Dr. Asefa also gave seminars and lectures to Langston University students and staff.

Al-Sharaka Program for Higher Education in Iraq

Langston University’s involvement in the University of Oklahoma-led partnership of Al-Sharaka Program for Higher Education in Iraq consists of providing training in small ruminant production to Iraqi scientists and establishing a ruminant nutrition laboratory at Salahaddin University in Arbil, Iraq. Analytical equipment, chemical reagents, and laboratory supplies have been procured and will be shipped to Iraq in the coming months. To provide training in small ruminant production, Langston University conducted a 3-week training program for seven Iraqi scientists in Egypt.

Updating and Enhancing the Skills of Iraqi Scientists in Small Ruminant Production

This training was held from September 7 through 29, 2004 at the Desert Research Center and Animal Production Research Institute of Egypt. Langston University is currently collaborating with the Desert Research Center and Animal Production Research Institute of Egypt on a Middle East Regional Cooperation (MERC) Grant funded by the United States Agency for International Development. Also participating in the MERC grant are Al-Quds University in East Jerusalem for activities in the Palestinian Authority, Jordan University of Science and Technology of Jordan, and the Volcani Center of Israel.

Seven Iraqi scientists representing four universities, Salahaddin University, Arbil; Basrah University, Basrah; University of Babylon, Hilla; and Al Anbar University, Al Ramadi; attended the training. The main objectives of the training program were to:

- Impart technical knowledge to the Iraqi scientists;
- Provide an opportunity for the Iraqi scientists to meet and establish contacts with Egyptian scientists and scientists from other Middle Eastern institutions who attended a concurrent MERC training program;
- Demonstrate to the Iraqi scientists the extension component of the MERC program and;
- Foster future relationships among all participating institutions.

During the first week of training, the Egyptian partners trained Jordanian, Palestinian, and Iraqi scientists on a small ruminant record software package developed in the MERC program. Following that software training, an additional two weeks of training was given to the Iraqi scientists by Drs. Roger Merkel, Terry Gipson, and Arthur Goetsch of Langston University and Dr. Lionel Dawson of Oklahoma State University. Topics discussed included computer applications, data handling and statistical analysis, herd health, reproductive management, and nutrition. Also during this time, the Iraqi scientists had the opportunity to visit Egyptian agricultural research institutes, Cairo University, and a research station located in Alexandria, Egypt. At the end of the training, Dr. Goetsch
accompanied the Iraqi and Egyptian scientists to the north Sinai for a two-day visit to farmers participating in the extension component of the MERC grant.

Potential for Development of Goat and Cow Cheeses in China

Drs. Tilahun Sahlu and Steve Zeng were invited to China to complete a USDA-FAS funded project entitled "Potential for Development of Goat Cheeses in China" in September 2004. The Chinese collaborators for this cheese promotion and research project were Northwest Sci-Tech University of Agriculture & Forestry, Jiangxi Agricultural University, Zhejiang University, and China Agricultural University. The objectives were to help create dairy curricula for cheese manufacturing at Chinese universities; promote cheese production and consumption in China; and seek future long-term joint research projects between Langston University and Chinese universities. During this trip, seminars on cheese manufacturing and on HACCP programs for dairy farms and processing plants were given to under-graduate and graduate students. In addition, cheese making workshops were conducted at Jiangxi Agricultural University and China Agricultural University.

International Collaboration in Goat Research and Production
Web-Based Decision Support Aids

This recently awarded grant that will begin in July of 2005. Through collaboration with institutions in Jordan, China, France, and Mexico, two web-based goat production and research decision-support tools developed at Langston University (goat nutrient requirements and feed intake; goat production system simulation model) will be translated into Arabic, Chinese, French, and Spanish. Adaptations in the tools will be made for widespread application. An international internet working group of professionals focusing on goats will be formed, and there will be an increased internationalization of Langston University through visits to other countries as well as participation of the foreign collaborators in programs at Langston University. This project will enhance the capability of the American Institute for Goat Research of Langston University to conduct collaborative research with many other countries on issues relevant to U.S. agricultural competitiveness, increase the sharing of research findings, elevate testing and adoption of new technologies developed in foreign countries, and improve the capability to provide leadership in increasing goat production efficiency in the U.S.

Training Representatives from the Democratic People’s Republic of Korea

From November 1 through 8, 2004 the American Institute of Goat Research hosted 5 persons from the Democratic People’s Republic of Korea (DPRK) and 4 representatives of Global Resources Services, Inc. Global Resources Services, Inc (GRS) is a private international humanitarian aid and development organization and was the sponsoring organization for the training. GRS has been assisting the DPRK government in establishing a goat dairy to produce milk and goat milk products to increase the supply of these valuable foods in the DPRK.

The goal of the training was to introduce the DPRK and GRS personnel to the important concepts of dairy goat production with a concentration on reproduction and dairy products. Upon their arrival, the visitors were welcomed by Drs. Marvin Burns, Dean of the School of Agriculture and Applied Sciences and Tilahun Sahlu, Director of the American Institute for Goat Research. Drs. Roger Merkel, Arthur Goetsch, and Terry Gipson then provided overviews of the Institute’s international, research, and extension activities, respectively.
The rest of the training period was spent discussing and holding training sessions on aspects of dairy goat production and making of goat milk products. Drs. Roger Merkel and Lionel Dawson began the training by presenting reproductive tract anatomy and basic reproduction in small ruminants. Dr. Tera Auchtung of the Institute presented information on photoperiod and its effects on reproduction and use for out-of-season breeding. These discussions were followed by a half-day hands-on training on artificial insemination of goats conducted by Mr. Les Hutchens of Reproduction Enterprises, Inc. The following day was spent at the Reproduction Enterprises, Inc. facility in Stillwater, OK where Mr. Hutchens and his staff introduced the procedures of semen collection, evaluation, and freezing as well as the conduct of a breeding soundness exam on bucks.

Dairy goat nutrition and a discussion on management practices to control internal parasites was led by Dr. Steve Hart. Dr. Lionel Dawson returned to the training venue at the Institute farm to discuss herd health issues with the scientists. Mr. Erick Loetz, farm manager, along with Mr. Jay Stevens provided training on goat milking, mastitis detection, and milk handling safety from the udder to creamery. Mr. Loetz also discussed farm management. Mr. Jerry Hayes, assistant farm manager, provided general management information and demonstrations on hoof trimming, horn tipping, body condition scoring, dehorning, and castration using an elastrator. Finally, Dr. Steve Zeng provided two days of training on milk safety and production of goat cheese.

The delegation stated that they were very impressed by the breadth and depth of the training as well as the quality of the training personnel. They left Langston University with updated knowledge on goat production that will be of great use as they implement their dairy goat plans in the DPRK.

**Goat Production in the Middle East (MERC Project)**

Numerous activities were conducted in the last year on the Middle East project, with the following collaborators: Al-Quds University in East Jerusalem, Volcani Center of Israel, Jordan University of Science and Technology, and Desert Research Center and Animal Production Research Institute of Egypt. Earlier, a training session on a small ruminant record-keeping system held in Egypt was discussed. In July of 2004, project participants from Egypt (Dr. Hassan El Shaer), Jordan (Dr. Khalil Ereifej), and Israel (Drs. Uzi Merin, Nissim Silanikove, and Gabriel Leitner), as well as the Institute, attended the 8th International Conference on Goats. In addition to short papers about specific activities on the MERC project, there was a special session on international research projects. In this session, chaired by Dr. Roger Merkel, Drs. Ereifej, El Shaer, and Silanikove overviewed activities at their respective locations. There was also an informal meeting held among the MERC project participants discussing upcoming activities.

One of the activities underway at each Mid-East location is the characterization of chemical and bacteriological status of goat milk. Israelis are focusing on effects of subclinical intramammary infection on milk production and quality. Goat production practices have been evaluated through use of a questionnaire in the West Bank, Jordan, and Egypt, including the identification of major constraints to high levels and efficiencies of production. Technology transfer is a major part of the project, particularly in Egypt, Jordan, and the West Bank. Training areas include use of byproduct feedstuffs such as with supplemental feed blocks, ammoniation of crop residues, goat health care including mastitis detection and treatment, manufacture of traditional and alternative cheeses, milk product hygiene, and use of improved genotypes.
8th International Conference on Goats

The 8th International Conference on Goats (ICG) was held in Pretoria, South Africa from July 4 through July 9, 2004. This conference provided the opportunity for goat specialists and enthusiasts to interact and exchange knowledge about modern goat production. Langston University was well represented with Drs. Terry Gipson, Arthur Goetsch, Roger Merkel, Ryszard Puchala, Tilahun Sahlu, and Steve Zeng attending and presenting research findings of the university. The five-day scientific program was stimulating and encompassed all facets of research, education and production. On day one of the scientific program, Dr. Tilahun Sahlu delivered the keynote speech for the conference. In his presentation entitled “Foresight on Goat Research”, Dr. Sahlu touched upon several important issues facing the scientific community. Dr. Sahlu noted that research is always evolving and ever-changing and that research is affected by economics and funding levels but also by political decisions and current events. Dr. Sahlu also stated that livestock production and distribution of products are going through both horizontal and vertical integration as well as increased globalization. In summary, Dr. Sahlu stated that “Therefore, as goat researchers our priority or goal should be to have a positive impact on the quality of life that includes the social, economic, and biological well-being of the world population that we serve”.

Current and Recently Completed International Projects

The following is a list of on-going or recently completed international projects of the American Institute for Goat Research of Langston University.

Title: International Collaboration in Goat Research and Production Web-Based Decision Support Aids

Support: USDA International Science and Education Competitive Grants Program

Period: 2005-2008

Institutions: Langston University
Jordan University of Science and Technology in Jordan
Northwest Science-Technology University in China
Département des Sciences Animales of Institut National Agronomique in France
University of Chapingo in Mexico

Objective: The goal of the project is to facilitate future collaborative research between the American Institute for Goat Research of Langston University and institutions in Arabic-, Chinese-, French-, and Spanish-speaking countries, as well as to gain knowledge of goat research and production practices in other areas of the world. Objectives are to translate and adapt two web-based goat production and research decision-support tools developed at the American Institute for Goat Research (goat nutrient requirements and feed intake; goat production system simulation model) for use and future collaborative research in the Middle East, China, France and other French-speaking countries, and Central and South America.
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<tr>
<th><strong>Title:</strong></th>
<th>Multinational Approaches to Enhance Goat Production in the Middle East</th>
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<tr>
<td><strong>Support:</strong></td>
<td>USAID Middle East Regional Cooperation Program</td>
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<tr>
<td><strong>Period:</strong></td>
<td>2000-2005</td>
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<tr>
<td><strong>Institutions:</strong></td>
<td>Egypt Desert Research Center and Animal Production Research Institute, Cairo</td>
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<td>Israel Volcani Center, Bet Dagan</td>
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<td></td>
<td>Palestinian National Authority Al-Quds University, East Jerusalem</td>
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<td>Jordan Jordan University of Science and Technology, Irbid</td>
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<tr>
<td><strong>Objectives:</strong></td>
<td>Overall: Revitalize and develop the Middle East goat industry via cooperative research and technology transfer to increase income and improve the standard of living of the indigenous people</td>
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<td>Specific: Characterize goat production systems of the Middle East region and distribute improve goat genotypes</td>
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<td>Increase knowledge of goat milk properties and develop new technologies for production of goat milk products in the Middle East</td>
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<td>Transfer appropriate available and developed technologies for goats to Middle Eastern farms/households, in particular proper milk hygiene and processing</td>
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<tr>
<th><strong>Title:</strong></th>
<th>Improving Ethiopian Household Food Security and Enhancing the Teaching, Research and Extension Ability of Awassa College of Agriculture, Debub University, Ethiopia</th>
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<tr>
<td><strong>Support:</strong></td>
<td>UNCFSP- USAID International Development Partnership Activity</td>
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<td><strong>Period:</strong></td>
<td>2002-2005</td>
</tr>
<tr>
<td><strong>Institutions:</strong></td>
<td>Fort Valley State University, Fort Valley, GA (lead institution) Awassa College of Agriculture of Debub University, Awassa, Ethiopia</td>
</tr>
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<td><strong>Objectives:</strong></td>
<td>Provide training to ACA staff in research methodology, parasitology, animal breeding, semen collection and freezing and artificial insemination</td>
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<td></td>
<td>Transport Boer goat semen to ACA for a crossbreeding program</td>
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Strengthen ACA’s current extension program and expand its impact on village goat production through formation of new women’s groups for goat production and providing more training to existing women’s groups.

Increase Langston University and GIGR’s involvement in and impact on international development.

Title: **Improving Ethiopian Household Food Security and Enhancing the Teaching, Research and Extension Ability of Alemaya University, Alemaya, Ethiopia**

Support: ALO- USAID Partnering with Higher Education for International Development

Period: 2002-2005

Institutions: Oklahoma State University, Stillwater, OK
              Alemaya University, Dire Dawa, Ethiopia

Objectives: Provide training to AU staff in research methodology, parasitology, animal breeding, semen collection and freezing and artificial insemination

Transport Boer goat semen to AU for a crossbreeding program

Strengthen AU’s current extension program and expand its impact on village goat production through formation of new women’s groups for goat production and providing more training to existing women’s groups

Increase Langston University and GIGR’s involvement in and impact on international development.

Title: **Al-Sharaka Program for Higher Education in Iraq**

Support: United States Agency for International Development

Period: 2003-2005

Institutions: U.S. University of Oklahoma, Norman, OK (lead institution)
              Oklahoma State University, Stillwater, OK
              Cameron University, Lawton, OK

Iraq Al Anbar University, Ramadi City
      Babylon University, Hilla City
      Basrah University, Basrah
      Salahaddin University, Arbil
      University of Technology, Baghdad

Purpose: Assist in modernizing and revitalizing Iraqi institutions of higher education
Langston University-Specific Activities:

Provide training to Iraqi university scientists to enhance and upgrade knowledge and techniques of small ruminant research and production

Provide equipment and expertise to establish a ruminant nutrition feedstuff analytical laboratory

Title: Potential for Development of Goat and Cow Cheeses in China

Support: USDA FAS

Period: 2002-2004

Institutions: Langston University

China
Northwest Sci-Tech University of Agriculture & Forestry
Jiangxi Agricultural University
Zhejiang University
China Agricultural University

Objectives: Help create dairy curricula for cheese manufacturing at Chinese universities; promote cheese production and consumption in China; and seek future long-term joint research projects between Langston University and Chinese Universities.
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