



Agricultural
Research
Service

Dale Bumpers Small Farms Research Center
(DBSFRC)
Booneville, Arkansas

And

Poultry Production and Product Safety
Research Unit (PPPSRU)
Fayetteville, Arkansas

October 2014 Highlights

October has been a very busy month for both Dale Bumpers Small Farms Research Center (DBSFRC) and Poultry Production and Product Safety Research Unit (PPPSRU). Research and technology outreach have continued as we started the new fiscal year and joined the South East Area of USDA-ARS.

Awards or Special Recognition

“Editors’ Choice” for the November 2014 Issue of Poultry Science Journal:

“Environmental Augmentation with Bacteriophage Prevents Colibacillosis in Broiler Chickens” by authors F. A. El-Gohary, W. E. Huff, G. R. Huff, N. C. Rath, Z. Y. Zhou, and A. M. Donoghue. 93:2788-2792.

Dr. Fatma Gohary, lead author was a visiting scientist from Egypt working with Dr. William Huff (ARS Research Microbiologist at PPPSRU) on this research.

Field Days/Stakeholder Meetings

On Oct 2nd, eight faculty/researchers and graduate students from The Center for Agroforestry at the University of Missouri (our cooperating partner) joined us at DBSFRC in Booneville, AR to discuss collaborative research. We toured research sites, talked about on-going research, and planned future projects involving silvopasture, forest farming and agroforestry research plans for our team. We were joined by the NRCS Booneville Plant Materials Center scientists, as well as, the foresters at the University of Arkansas Cooperative Extension Service.



On Oct 4th, ARS Research Leader, Dr. Annie Donoghue participated in the Horticulture and Agroforestry Research Center Field Day in New Franklin, MO, and attended The Center for Agroforestry at the University of Missouri Advisory Board meeting hosted by Dr. Shibu Jose, Center Director, and Dr. Gene Garrett, Professor Emeritus, our cooperating partners.

Research/Training

On October 11th, Erin Smyth, DBSFRC Biological Science Aid (trainee) and Animal Science graduate student, and Connie Cox, University of Arkansas Animal Caretaker, participated in the sheep and goat Artificial Insemination (AI) course at Langston University in Langston, OK. They learned the art of AI for sheep and goats. These techniques will be used with ARS Animal Scientist Dr. Joan Burke's research at DBSFRC and shared with producers to enhance their programs.



Dr. Joan Burke has been developing AI techniques to be used on the farm to reduce the risk of infectious diseases passed by rams. Mohan Acharya, PhD student at

University of Arkansas Animal Science Department, traveled to Virginia State University to work with cooperator Dr. Stephan Wildeus on a research project. The aim was to determine the efficiency of AI in sheep using chilled semen and simple vaginal AI. At the UA, Mohan is currently examining ram semen extenders for use with chilled semen that will eventually be shipped and used on cooperating farms. A preliminary study is being conducted on this AI system in goats. It is more common to use frozen semen in goats, but this limits the availability to smaller farms.



As part of Dr. Michelle Thomas's research at DBSFRC, calves were recently weaned using either a low-stress fence-line weaning system or traditional total separation. The fence-line weaning placed calves across from their dams in adjacent pastures with no supplementation. Existing barbed or woven wire fences were reinforced with either single-strand electric polywire or high tensile wire. Total separation calves were on pasture, and had supplementation with bermuda grass hay and alfalfa pellets. This fencing consisted of barbed wire and two strands of electric polywire.



Performance data are being analyzed for differences between treatments. Steers will be back grounded on wheat pasture and finished either on grass-based or legume-based forages.

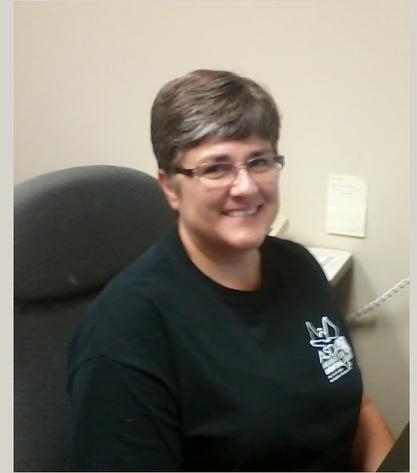
Fall planting and fertilizing is in full swing on almost 700 acres at the DBSFRC. Till and no-till practices are being used to plant our pastures and research plots. Forages include wheat, annual rye, hairy vetch, chicory, and forage turnips for cattle and small ruminant animals. Pollinator plots and organic plots are also being planted.



Patented technology developed at the Center was used to apply fertilizer amendments to cool season pastures. The ARS Sub-surfur, which was designed to incorporate dry poultry litter into perennial pastures, is being tested using inorganic ammonium nitrate. Rates as low as 136# of 34-0-0 were applied to fescue pastures and bermuda grass research plots over seeded with wheat and are being compared to traditional practices. Poultry litter also was applied using both the ARS Subsurfur and conventional practices.

New Employees, Students, Visiting Scientist

Michelle L. Thomas, Ph.D. (pictured on right), is an ORISE fellow sponsored by ARS at the DBSFRC, working on grass-fed beef research under the direction of Dr. Joan Burke. Dr. Thomas completed her doctoral degree in Animal Science, with an emphasis in Food Animal Wellbeing, in May 2014 from the University of Arkansas. Her recent research focused on cattle behavior in the slaughter facility. Her M.S. study focused on grass-fed beef production, including performance and meat quality parameters. She has experience in beef, lamb, and poultry production. Her passions are promoting animal care and humane handling, life-long learning, and working with people and farm animals.



Tyler Brewer (picture on left) is a new Biological Technician (trainee) under the Pathways Recent Graduate program stationed at DBSFRC. Tyler graduated earlier this year from Arkansas Tech University in Russellville, AR in Ag-Business. He began working for DBSFRC as a summer student and then as a temporary university employee.

The vacant Animal Caretaker position at Booneville was opened the last week in October. Candidates are currently being evaluated and expectations are that the position will be filled by the end of November.

University of Arkansas work/study students began at the PPSRU in October. These students include: Will Rothwell, Emerson Taylor, Jackson Been, Donald Washington, Del'Juan Jackson and Kosma Olan.

ARS Activities

On Oct 7-9, Dr. Annie Donoghue, Chair of the Research Leader Advisory Council (RLAC), attended a kick off workshop for activities related to the Year of the RL in Beltsville, MD.

On Oct 30, Year of the RL Webinar. Dr. Annie Donoghue represented RLAC on the call.

Invited Talks

On Oct 21-22, Dr. Annie Donoghue presented research findings at the NIFA Organic Programs Project Directors Meeting. Fayetteville Unit is the lead on a nationally cooperative \$1.2M grant for research on "Use of Natural Strategies to Alleviate Enteric Pathogens in Organic Poultry".

Community Outreach

Fall kidding and 1st lambing occurred at DBSFRC in October. As happens occasionally, we had a few orphans. We had one orphan named Lily. Following successful hand rearing by ARS Biological Technician



Jackie Cherry, Lily was adopted by Gus Billings a 4H member from Waldron, AR. He will show her in the Scott County Fair next fall. He is pictured with Lily on his lap, showing her off to his grandmother. We also had a few orphan lambs, prepared for adoption by Jackie Cherry and other members of the livestock crew at the location.



These orphans will go to a Christmas Tree farm for petting purposes. The lambs will return to the ARS flock following Christmas season. Widget the lamb is pictured with Julie (Dr. Dan Pote's granddaughter).

Upcoming in November

On November 3rd, Bala Packialakshmi, advised by ARS Scientist, Dr. Narayan Rath at the University of Arkansas, will defend his Ph.D. dissertation "Identification and the Significance of Selective Proteins in Bile and Plasma of Normal and Health-compromised Chickens".

On November 9th-12th, Dr. Annie Donoghue will participate in the Symposium on Gut Health in Production Food Animals. It will be sponsored by the Federation of Animal Science Societies, St. Louis, MO.

On November 13th-14th, Dr. Joan Burke has been invited to participate in "The Sheep Genomics Workshop" at the University of Nebraska East Campus in Lincoln. The USDA Agricultural Research Service (ARS) recognizes the great strides that have been made in genomics across multiple agricultural species; however, despite advances, specific species still lag behind in the amount of genomic information available, as well as, the translation of this information for utility by industry or the farmer. The workshop will include leaders in the field of sheep/livestock genomics from universities, ARS and industry. They will discuss current challenges, as well as, establish a strategy that could be implemented to improve genomic information and tools for the ovine industry. Another equally important goal will be to create collaborative research efforts with the experts present.

On November 14th-15th, Dr. Annie Donoghue is an invited panel speaker for the Farmer Veteran Stakeholder Conference that will be held in Des Moines, IA. She will be speaking about our Armed to Farm Program; a collaborative effort between University of Arkansas, Division of Agriculture, NCAT, the Farmer Veteran Coalition, the University of Missouri's Center for Agroforestry, and the University of Arkansas Pine Bluff for veterans pursuing small farm enterprises.