December 18, 2020 | ISSUE 9

RIDING THE RANGE

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Welcome to Dr. Leyla Ríos who started in December as an Assistant Professor of Small Ruminant Production.

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DEPARTMENT OF ANIMAL AND DAIRY SCIENCES

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REID PLACES 1ST IN GRADUATE STUDENT RESEARCH SYMPOSIUM – POSTER PRESENTATION

The 2020 Mississippi State University Graduate Student Research Symposium was held virtually on October 24, 2020. Ms. Dana Reid, Graduate Research Assistant under the direction of Dr. Derris Burnett, won 1st Place in the Ph.D. Poster Section of Life and Biomedical Sciences with her project titled "The Effect of Melatonin on Dam Milking Traits and Calf Performance in Beef Cattle."

Melatonin has been documented to alleviate compromised pregnancies and enhance livestock performance traits in offspring. Therefore, the goal of this study was to determine whether melatonin supplementation altered milking traits in beef cattle dams and whether these effects impacted performance in their offspring. The overall mission is to determine whether melatonin can be a feasible supplement to recommend to producers for improving production traits, including average daily gains and weaning weights.

This project is a collaboration between Mississippi State University and the USDA-ARS Fort Keogh Livestock and Range Research Laboratory in Miles City, MT. This research will also be presented at this upcoming ASAS Southern Section Meeting in 2021.

Submitted by Ms. Dana Reid.

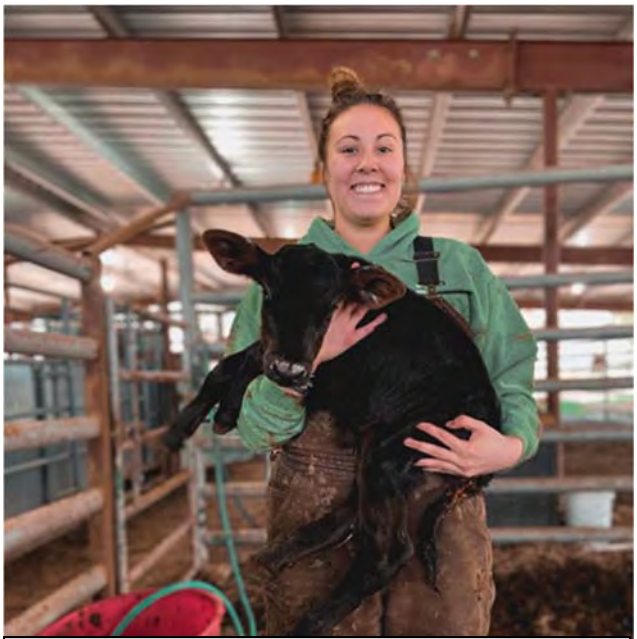
Ms. Dana Reid, ADS Graduate Student.

MESSMAN PLACES 3RD AT MSU GRADUATE STUDENT RESEARCH SYMPOSIUM – ORAL PRESENTATON

Riley Messman presented her Master of Science thesis work at the 2020 MSU Graduate Student Research Symposium held on October 24, 2020, via a virtual conference. Her presentation, "Melatonin Induced Changes in the Bovine Vaginal Microbiota During Maternal Nutrient Restriction," focused on the effects of nutrient restriction and melatonin supplementation on the vaginal microbiota during late gestation in Brangus heifers. Authors were intrigued to learn about the vaginal microbiota's role in reproductive performance and if composition of the vaginal microbiota was altered by any treatments given.

This research project was in collaboration with a larger project evaluating the effects of melatonin and nutrient restriction on fetal development led by Zully Contreras-Correa. Ms. Messman would like to acknowledge several Animal and Dairy Science faculty members, including Dr. Caleb Lemley and Dr. Henry Paz, the staff at H.H. Leveck Research Center - Beef Unit, and the Microbiome Insights Company located in Vancouver, Canada, for their efforts regarding this research project. Data from this project will be presented at the 2021 ASAS Southern Section Meeting.

Submitted by Ms. Riley Messman.



Ms. Riley Messman, ADS Graduate Student.

ADS WELCOMES DR. LEYLA RÍOS IN SMALL RUMINANT PRODUCTION

Dr. Leyla Ríos started as an Assistant Professor in Research and Extension in December in the Department of Animal and Dairy Sciences focused on Small Ruminant Production. Her expertise is on nutrition-parasite interactions in ruminants, plant extracts, and bioactive forages for animal health and animal welfare.

Dr. Ríos earned her graduate degrees as follows: Master of Science in Animal Nutrition from the Universidad Central de Venezuela; Ph.D. is from The University of Edinburgh and Moredun Research Institute-Scotland where she worked on "Mechanisms of action of plant secondary metabolites and their effect on the immune response of parasitized sheep" under the direction of Drs. John Huntley and Frank Jackson.

Dr. Ríos is a Former Associate Researcher at AGROSAVIA (Agricultural Research Corporation in Colombia) and a former Associate Professor at Universidad Central de Venezuela. In Agrosavia, Dr. Ríos was part of the Animal Health and Welfare research group (Colciencias) where she worked with the development of natural treatments to reduce the use of commercial drugs for controlling gastrointestinal parasites that have led towards anthelmintic resistance. Other responsibilities included being a leader of the group of researchers from Agrosavia who worked on the small ruminants' project in the Caribbean regions and Colombian Highlands from 2017 to 2019. Dr. Ríos was also a member of the Livestock Scientific Committee and the Bioethics Committee.

Recent publications from Dr. Ríos can be reviewed by visiting this website: https://www.researchgate.net/profile/Leyla_Alvarez.

Submitted by Dr. Leyla Ríos.

Dr. Leyla Ríos, Assistant Professor in Research and Extension whose focus is on Small Ruminant Production.

A NEW ERA IN THE MEAT SCIENCE AND MUSCLE BIOLOGY LABORATORY

Well, we survived our first semester without the legendary Tim Armstrong at the helm of the Meat Science and Muscle Biology laboratory, and while we've had our share of trials, I'd like to acknowledge the efforts of our "interim" manager and Tim Armstrong protégé, Mr. Joseph Mangano. In addition to taking over the reins of the daily operations, Joseph has been intricately involved with our teaching, research, and extension efforts during the last semester.

Teaching: With Josephs assistance, Drs. Dinh and Burnett have revamped the delivery method for the Introduction to Meat Science laboratory (ADS3314) where students now are actively involved in the daily operations of the facility and receive "on the job training" directly from Joseph and the instructors. With this new model, students can drastically increase their hands-on learning experience and receive much more one-on-one instruction compared to our previous group model which had 25 students in each lab. This change required Joseph to hone his teaching and training skills to work with students with a wide range of meat processing experience. Joseph handled this change in stride and received positive reviews from students he trained over the semester.

Extension: In terms of Extension efforts, Joseph has been instrumental in helping to obtain empirical data to support local producers and processors interested in farm-direct marketing of their products. Joseph has helped develop content for small ruminant and beef processing workshops that have been used to train individuals interested in opening processing plants in the region and has recently trained one group of beef processors from harvest through packing and labeling of products. As a result of this training, this group of processors

recently broke ground on their new facility and expect to be open in Spring of 2021.

Research: Joseph has been intricately involved in our ongoing research efforts and has used his knife prowess to help with at least 4 research projects this fall including:

1. Fetal bovine c-sections and necropsies (Collaboration with Dr. Lemley and Dr. Burnett)

2. Hot-boning sows for bratwurst making (FSNHP/ADS Collaboration with Dr. Schilling, White, Dinh, and Burnett

3. Harvesting gravid uteri from pregnant sows (Collaboration with Dr. Burnett and Dr. Lemley)

4. Catfish processing (FSNHP/ADS Collaboration with Dr. Schilling and Dr. Dinh)

Joseph's skill, flexibility, and willingness to lend a hand have not gone unnoticed by ADS/FSNHP faculty and staff and he is rapidly becoming a steadfast leader in the Department and an essential asset to the success of CALS/MAFES.

Submitted by Dr. Derris Burnett.

DEVELOPING FUTURE WORKFORCE IN SMALL RUMINANT PRODUCTION

Goat and Sheep Production (ADS 4223/6223) is aimed at empowering students with knowledge in the management and marketing of goats and sheep in production enterprises. Because of the pandemic, this class was taught online during the fall 2020 semester.

Goat and Sheep Production Laboratory (ADS 4211/6211) is focused on the practical application of management strategies in goat and sheep. In this laboratory class, students sought and generated new knowledge in contemporary goat and sheep production through a diversified pedagogy including the following active learning strategies and the development of laboratory reports.

Students learned about handling sheep, parasite control, how to use the FAMACHA test, and hoof trimming on the sheep herd at MSU from Kipp Brown.

Students developed a fundamental understanding of business planning from Mr. Charles (Chip) Templeton, director of MSU's Small Business Development Center. Following the workshop, students earned a certificate.

In addition, students learned about nutrition and forages from Dr. Rocky Lemus, Professor and Extension Forage Specialist and the Leader of the Center for Forage Management & Environmental Stewardship at MSU.

Because of the pandemic, students could not visit the local goat and sheep producers. However, Mr. Johnny Wray of the High Hope Farm brought the farm experience to the classroom. He taught students real-world knowledge and skills in raising and offering the finest grass-fed livestock for sale.

Dr. Allen Williams provided an interactive learning opportunity to the students on regenerative agriculture.

Finally, students learned about goat harvest and meat quality from Dr. Derris Devost-Burnett, faculty member in the Department of Animal and Dairy Sciences.

Small ruminant production is a niche area in livestock farming. Dr. Erdogan Memili is the instructor of these classes and he can be contacted through em149@ads.msstate.edu.

Submitted by Dr. Erdogan Memili.

ADS STUDENT AWARDED THE HOPE SCHOLARSHIP

Ms. Lilly McSpadden, a senior in the Department of Animal and Dairy Sciences at Mississippi State University, was named the recipient of the Heart of Dixie Palomino Exhibitors Association (HOPE) Scholarship during the HOPE Halloween Horse Show in October at the Lauderdale County Agri-Center in Meridian, Mississippi. This was the second year that the $500 scholarship was awarded to a college student, as Emanual Mireles, an alumnus of ADS, was the first recipient.

Lilly was selected due to her volunteer history working at the HOPE-sponsored shows. She had volunteered for multiple HOPE shows in 2019 and 2020 where she assisted the ring steward, show management, and judging officials during each show. Lilly's background in horses made her a vital component to the success of the shows. HOPE members and show officials from various shows contributed in the selection process, finding that Lilly was the unanimous choice for the scholarship.

For students wanting further information about the HOPE Scholarship, they can contact ADS faculty member and HOPE Youth Advisor Dr. Molly Nicodemus at mcn16@msstate.edu.

Submitted by Dr. Molly Nicodemus.

Left to Right: Dr. Molly Nicodemus with HOPE Scholarship Recipient Lilly McSpadden and HOPE President Allan Swinney at the awarding of the HOPE Scholarship. Photo by Randy Dailey.

ADS 4231/6231 GIVES BACK TO HORSE INDUSTRY

In the fall of 2020, ADS 4231/6231 Practices in Horse Care & Management was designated as a Community Engaged Learning (CEL) course. Students were required to participate in community engagement activities focused on giving back to the horse industry by volunteering at local horse shows working with various breed associations. The community partners that helped students achieve this objective included members of the Mississippi Quarter Horse Association (MQHA), Heart of Dixie Palomino Exhibitors Association (HOPE), and the Mississippi Pinto Horse Association (MS PtHA).

Students were able to meet people in the horse show industry and learn more about what these individuals do in the industry. A part of the assignment for the CEL program included reflecting on the community engagement activities that the students participated in. The feedback from the students and from those in the industry was positive with several students planning to continue their volunteering after the completion of the course. ADS 4231/6231 will be offered in Spring 2021 and a part of the community engagement activities will include the Dixie National Horse Show in January being sponsored by HOPE and MS PtHA and the Dixie National Horse Show in February being sponsored by MQHA.

This is the first year for the HOPE/MS PtHA Dixie National Horse Show and provides the opportunity to have student volunteers assist with the show. For individuals interested in learning more about the course and the CEL program, they can contact the course instructor, Dr. Molly Nicodemus, at mcn16@msstate.edu.

Submitted by Dr. Molly Nicodemus.

ADS 4231/6231 Students assisting the ring steward at the HOPE Halloween Horse Show at the Lauderdale County Agri-Center. Photo by Randy Dailey.

EQUINE STUDENTS LEARN MORE ABOUT EQUINE ASSISTED ACTIVITIES & THERAPY

With the opening of the local equine therapy center, Dogwood Equine, in Starkville earlier this year, students in the Department of Animal & Dairy Sciences have had a unique opportunity to work firsthand at the center learning more about equine assisted activities and therapy (EAAT). The center is owned and operated by Animal Physiology Ph.D. Candidate Mrs. Katie Holtcamp.

Mrs. Holtcamp works with Dr. Molly Nicodemus, ADS faculty member, as a part of her dissertation research focused on EAAT and substance abuse disorder. To assist Dr. Nicodemus, Mrs. Holtcamp volunteered her center and time allowing ADS students as a part of their Community Engaged Learning (CEL) requirements for ADS 3233 Equine Assisted Therapy. ADS 3233 Equine Assisted Therapy is taught by Dr. Nicodemus and was recently approved as a CEL course. With the new CEL designation, it was a great opportunity for students to work with the new center.

In fact, this opportunity for ADS students to volunteer at the center will continue into the winter intersession as this will be the first winter intersession that ADS 3233 Equine Assisted Therapy is being taught. The ability to offer this course during the winter intersession is due to Mrs. Holtcamp's willingness to allow ADS 3233 students to volunteer at the center during the holiday season. For students wanting to learn more about ADS 3233 Equine Assisted Therapy, they can contact the course instructor, Dr. Molly Nicodemus, at mcn16@msstate.edu.

Submitted by Dr. Molly Nicodemus.

ADS 3233 Students volunteering at Dogwood Equine Therapy Center. Photo by Chelsea Chestnut.

PHOTO CONTRIBUTION FROM SAMMY BLOSSOM

Sammy Blossom is an alumnus of ADS and captured many photos during his 16-year career with the Mississippi Cattlemen's Association. Enjoy the photo.

Photo courtesy of Sammy Blossom Photography: https://www.sammyblossomphotography.com/.

MS STATE FAIR MARKET STEER SHOW

The 2020 Mississippi State Fair Market Steer Show included 71 steers shown by 74 4-H and FFA youth. There were 22 Prospect Steers and 49 Progress Steers exhibited. ***Submitted by Dr. Dean Jousan.***

Grand Champion Prospect Steer: Exhibited by Collin/Cash Culpepper, Forrest 4-H

Grand Champion Progress Steer: Exhibited by Anna Beth/Aimry Blackwell, Smith 4-H/Raleigh FFA.

MS STATE FAIR COMMERCIAL BEEF HEIFER SHOW

The 2020 Mississippi State Fair Commercial Beef Heifer Show included 111 commercial beef heifers shown by 104 4-H and FFA youth. There were 48 English heifers, 39 American heifers, and 24 European heifers.

Submitted by Dr. Dean Jousan.

Supreme Champion Commercial Beef Heifer: Exhibited by Conner Boyles, Smith 4-H.

MS STATE FAIR BEEF BREEDING SHOW

The 2020 Mississippi State fair Beef Breeding Show included 515 beef breeding cattle shown by 279 4-H and FFA youth. For a breakdown of the beef breeding champions and numbers shown in each breed, go to the October 2020 Animal Lines Newsletter: http://extension.msstate.edu/newsletters/4h-animal-lines-newsletters.

Submitted by Dr. Dean Jousan.

Supreme Champion Beef Breeding Female (% Simmental)
Exhibited by Camden Patton/Dawson Edwards, Rankin 4-H.

Supreme Champion Beef Breeding Bull (Simmental)
Exhibited by Hayden Kilgore, Newton 4-H.

MS STATE FAIR DAIRY CATTLE SHOW

The 2020 Mississippi State Fair Dairy Cattle Show included 99 dairy cattle shown by 43 4-H and FFA youth. There were 43 Holsteins, 50 Jerseys, and 6 Other Dairy Breeds cattle in the show.

Submitted by Dr. Dean Jousan.

Grand Champion Jersey Female: Exhibited by Holden Taylor, Prentiss 4-H.

MS STATE FAIR COMMERCIAL DAIRY HEIFER AND COW SHOWS

The 2020 Mississippi State Fair Commercial Dairy Heifer and Cow Shows included 18 commercial dairy heifers/cows shown by 20 4-H and FFA youth.

Submitted by Dr. Dean Jousan.

Champion Commercial Dairy Heifer: Exhibited by Haven Foster Simon, Pearl River 4-H.

Champion Commercial Dairy Cow: Exhibited by Savana/Ada/Millie Ashley, Wilkinson 4-H.

MS STATE FAIR MARKET HOG SHOW

The 2020 Mississippi State Fair Market Hog Show included 36 hogs shown by 28 4-H and FFA youth.

Submitted by Dr. Dean Jousan.

Grand Champion Market Hog – Exhibited by Kaci Lynn Ladner, Pearl River 4-H.

MS STATE FAIR MARKET GOAT AND COMMERCIAL MEAT GOAT DOE SHOWS

The 2020 Mississippi State Fair Market Goat Show included 109 market goats shown by 74 4-H and FFA youth. The 2020 Mississippi State Fair Commercial Meat Goat Doe Show included 107 does shown by 68 4-H and FFA youth.

Submitted by Dr. Dean Jousan.

Grand Champion Market Goat – Exhibited by Elizabeth/Sadie Nichols, Pontotoc 4-H

Grand Champion Commercial Meat Goat Doe – Exhibited by Payton/Mallary/Paxton Lemoine, Rankin 4-H/Puckett FFA.

MS STATE FAIR MARKET LAMB AND WETHER DAM SHOWS

The 2020 Mississippi State Fair Market Lamb Show included 74 market lambs shown by 47 4-H and FFA youth. The 2020 Mississippi State Fair Wether Dam Show included 14 wether dams shown by 17 4-H and FFA youth.

Submitted by Dr. Dean Jousan.

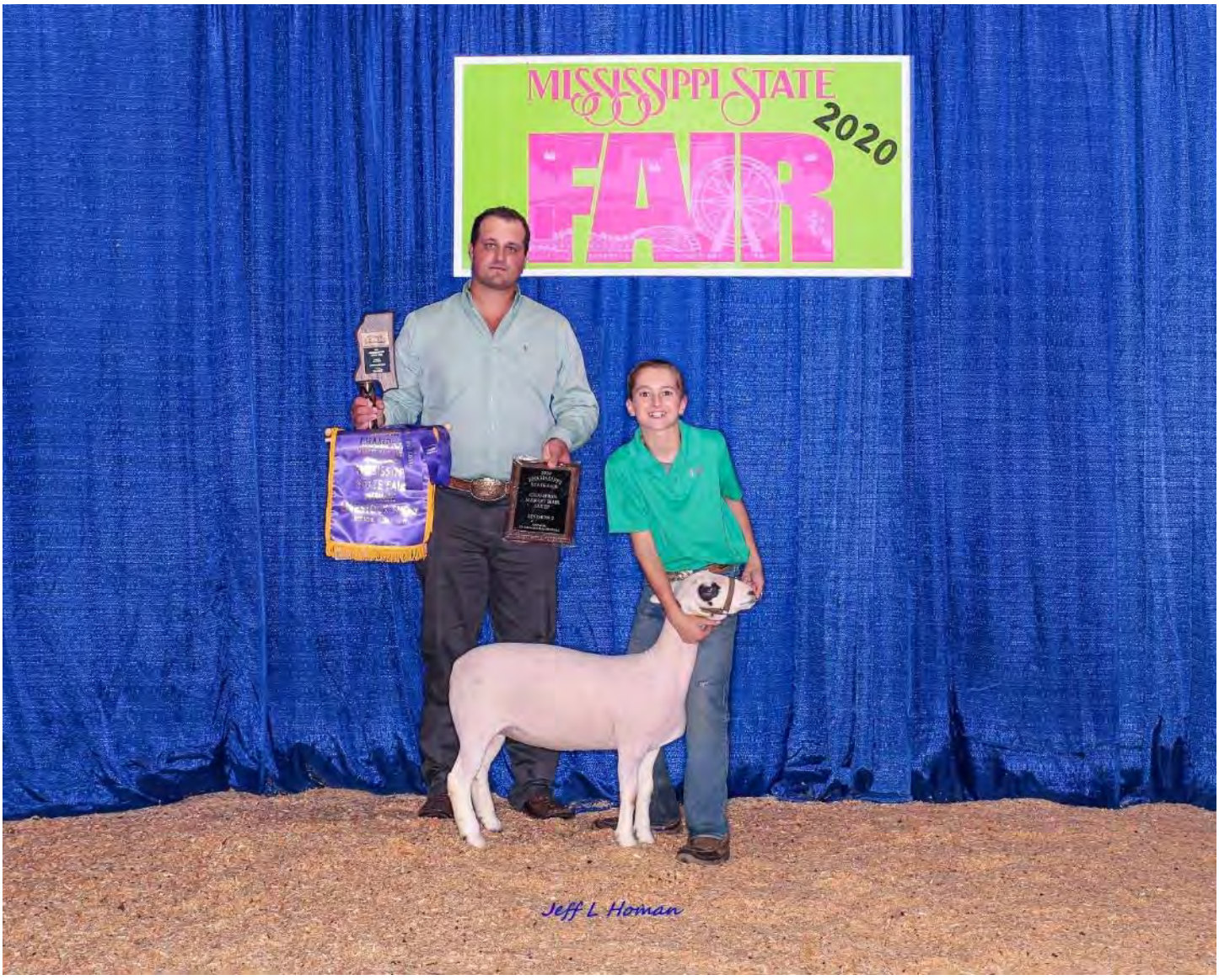
Grand Champion Lamb – Exhibited by Hayden Kilgore/Tripp McGee, Newton 4-H.

Grand Champion Wether Dam – Exhibited by Avery Wood, Montgomery 4-H.

MS STATE FAIR MARKET HAIR SHEEP SHOW

The 2020 Mississippi State Fair Market Hair Sheep Show included 8 market hair sheep shown by 7 4-H and FFA youth.

Submitted by Dr. Dean Jousan.



Grand Champion Market Hair Sheep – Exhibited by Adam/Brady Cornelius, Lee 4-H/Nettleton FFA.

MS STATE FAIR DAIRY GOAT SHOW

The 2020 Mississippi State Fair Dairy Goat Show included 111 dairy goats shown by 39 4-H and FFA youth. Here is a breakdown of dairy goats exhibited by breed: 30 Alpine; 38 Nigerian Dwarf; 22 Nubian; 9 All Other Purebred; and 12 Grade/Recorded Grade. ***Submitted by Dr. Dean Jousan.***

Best in Show Senior Doe: Exhibited by Brinkley Boswell, Rankin 4-H.

Best in Show Junior Doe: Exhibited by Hannah Powell, DeSoto 4-H.

MISSISSIPPI 4-H/FFA REPLACEMENT BEEF HEIFER DEVELOPMENT CONTEST WINNERS

In 2019-2020, 8 Mississippi youth completed the 4-H/FFA Replacement Beef Heifer Development Contest and were awarded prizes at the 2020 Mississippi State Fair. The contest involved daily management of three beef heifers over 10 months. At the end of the contest, youth submitted a record book (30% of score) and had their heifers evaluated (20% of score) by a panel of beef producers. The final phase of the contest consisted of a presentation given to the judges (50% of score) defending their management decisions.

Sponsors for this contest included: Bob Robinson; American Livestock Insurance; B&B Cattle Co.; Bouie River Beefmasters; Campo Farms; Carcass Performance Partners Bull Sale (Rocky Hollow Farm); Courtesy Motors; Havard Pest Control; Hearz Yer Sign; Jackson Power Train; McDaniel Farms; MG 4M Farms; Mississippi Ag Company; Mississippi Simmental & Simbrah Association; Mississippi State University Extension; Mississippi Cattlemen's Association; Pine Belt CDJR; Red Fox Farm; Southern Producers Heifer Sale Group; and Vowell Farms.

The winners of the contest included: 1st Place: Noah Carpenter, Tishomingo County; 2nd Place: Cheyenne Hughes, Tishomingo County; 3rd Place: Hannah Buse, Jones County; 4th Place: Faith Sullivan, Smith County; 5th Place: Luke Hay, Lauderdale County; Finalists: Adaline Rouse, Jackson County; Elizabeth Rone, Panola County; and Nina Hay, Lauderdale County.

Submitted by Dr. Dean Jousan.

SPECIAL ANNOUNCEMENTS FROM ADS

1. **Dr. Erdogan Memili has been elected to serve and represent the College of Agriculture and Life Sciences in the University Grievance Committee for two years.**

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AND LIFE SCIENCES

2. **Dr. Jane Parish has been elected to serve and represent MSU Extension in the University Grievance Committee for two years.**

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EXTENSION

2020 REFEREED PUBLICATIONS (43 total)

Satrio, F.A., N.W.K. Karja, M.A. Setiadi, E.M. Kalin, M. Gunawan, **E. Memili**, and B. Purwantara. 2020. Effect of sericin supplementation in collection medium on bovine oocyte nuclear maturation. IOP Conference Series: Earth and Environmental Science. 478:012006. https://iopscience.iop.org/article/10.1088/1755-1315/478/1/012006.

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Liao, S.F., M.S. Hasan, Z. Yang, A.W. Stevens, J. Brett, and Z. Peng. 2020. Feeding arsenic-containing rice bran to growing pigs: Growth performance, arsenic tissue distribution, and arsenic excretion. Int. J. Environ. Res. Public Health. 17(22): 8530. https://doi.org/10.3390/ijerph17228530.

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2020 REFEREED PUBLICATIONS (43 total)

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Owen, M.P.T., E.J. Northrop, J.J J. Rich, G.A. Perry, R.D. Messman, **T.T.N. Dinh**, K.J. McCarty, J. Yang, D. Wan, and **C.O. Lemley**. 2020. Oxylipin concentrations in bovine corpora lutea during maternal recognition of pregnancy. Theriogenology. 142:384-389. https://doi.org/10.1016/j.theriogenology.2019.10.003.

2020 REFEREED PUBLICATIONS (43 total)

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