

Extension Education - Livestock and Poultry: Extension Livestock Session

829 Animal Science Image Gallery – A Source for poultry images. J. B. Hess* and W. D. Berry, *Auburn University, Auburn, AL.*

The Animal Science Image Gallery was created to provide images to middle school, high school and university teachers wishing to include images of animal agriculture in their courses. With limited expertise in poultry at the university level in some regions, a reference site of poultry and/or poultry industry images would be a useful teaching tool nationally. The Animal Science Image Gallery was designed to fill this role. Each image on the site comes with a limited description so that educators can select correct images for the course content. Subject editors review each image and the corresponding text for accuracy and appropriateness. Within the poultry portion of the Image Gallery, subcategories include; anatomy and physiology, disease and pathology, housing and equipment, poultry processing and poultry species and breeds. To date, the poultry site does not have a wide range of images available to offer coverage of the many types of poultry operations in the U.S. In addition, little has been uploaded regarding poultry physiology and disease. Please consider uploading images to the site commensurate with your area of expertise. Access the Animal Science Image Gallery at http://cygnet.richmond.edu/image_gallery to browse or upload images. Contributing to the Image Gallery will ensure that agricultural and science instructors will have quality poultry science materials to draw from in organizing lectures on poultry related topics.

Key Words: Teaching, Images, Poultry

830 National training program on depopulation and disposal procedures for avian influenza infected poultry flocks: An extension success story. G. Malone*¹ and N. Tablante², ¹*University of Delaware, Georgetown,* ²*University of Maryland, College Park.*

Following an outbreak of low pathogenic H7N2 avian influenza (AI) on the Delmarva Peninsula in 2004, it became apparent that others could benefit from our successful response and the knowledge gained in the depopulation and disposal of these flocks. With support from the USDA-CSREES, a comprehensive training program was developed based on lessons-learned from our experience and others who have dealt with an AI outbreak. This half-day program was offered from 2005-2007 and was continually updated as new information became available. Information discussed in this training included a historic and current review of the AI situation, human health requirements for responders, and the various options and procedures for mass depopulation and carcass disposal for infected breeder, broiler, turkey and cage layer flocks. A total of 33 sessions were held in 26 different USA poultry producing states with ~2000 key poultry industry, agencies, university and private industry personnel in attendance. With the recent heightened awareness to AI and the need for developing response plans for a potential outbreak, the feedback from this training was highly favorable and very timely. Areas identified as most helpful were an understanding of the intricacy of responding to an AI outbreak based on real-world experiences, mass depopulation techniques with a particular interest in water-base foam as an emerging technology, and in-house composting as one of the most viable disposal options. This training has made participants aware of the need and complexity of being prepared to rapidly respond to an AI outbreak in order to effectively and quickly eradicate the disease. As a measure of success,

this extension program has provided direction and help shape how we respond to AI in the USA using the most appropriate mass depopulation and disposal methods for the different situations that might be encountered.

Key Words: Avian Influenza, Mass Depopulation, Carcass Disposal

831 Educating livestock producers on the impacts of temporary feeding sites by the use of a novel mobile rain fall demonstration trailer. K. W. Harborth*, J. M. DeRouchey, T. T. Marston, and J. P. Harner, *Kansas State University, Manhattan.*

The use of temporary winter feeding sites is very common during the late winter and early spring months to supply feed and/or water to livestock. While most small producers do not feel environmental deterioration can occur from these sites, improper placement or management in fact can impact the surrounding environmental quality. In order to educate livestock producers on the impact that feeding sites can have on feed utilization, animal health and performance, stable fly production and environmental quality, a mobile demonstration trailer was designed and constructed in 2005. The demonstration equipment was designed and constructed on a 16' bump hitch trailer. The demonstration involves a rainfall event (up to 3" in 15 min) on a mixture of forage and manure to illustrate typical combinations at a feeding site. Excess moisture from the rain fall event is collected both from seepage (6" deep mixture) and from surface runoff. Once the water is collected, visual observation as well as rapid analysis for nitrates, ammonia, pH, turbidity, total solids and bacteria using quick test procedures can be performed. This demonstration has impacted over 3,000 producers from 80 Kansas counties as well as 5 different states in 2005 and 2006. For ease of use, table top demonstration units have been developed in 2007. These units will improve the ease of use for indoor events and new educational opportunities for small acreage educational events. In conclusion, the mobile rain fall demonstration trailer provides a means to practically and interactively educate producers on the implications of using winter feeding sites by providing an educational opportunity to recommend best management practices for their use.

Key Words: Water Quality, Winter Feeding sites, Extension

832 The effect of tillage practice and corn stalk grazing on crop yields. W. A. Griffin*¹, T. J. Klopfenstein¹, G. E. Erickson¹, W. Luedtke², and M. A. Schroeder², ¹*Universtiy of Nebraska, Lincoln,* ²*Agricultural Research and Development Center, Ithaca, NE.*

A nine year study was conducted to determine the effect of four different tillage practices and spring grazing of corn stalk residue on crop yields in a corn-soybean crop rotation. The fields used were a combination of fine sandy loam and silty clay loam soil types. The four tillage practices used were: 1) pre-corn till (soybean residue tilled in the fall prior to the planting of corn; PCT), 2) ridge till (RT), 3) no-till (NT), and 4) spring till (corn residue tilled prior to planting of soybeans; ST). Additionally, steers were allowed to graze half of the corn stalks at a 2.5 times stocking rate for 60 d (Normal stocking rate = 0.32 hectares/steer for 60 d) and yields were compared to determine

the effects of corn stalk grazing on corn and soybean yields. Corn yields for NT (13,720 kg/ha), ST (13,635 kg/ha), and RT (13,823 kg/ha) were similar ($P = 0.30$); however, PCT had a negative impact on corn yield (11,832 kg/ha; $P < 0.01$). Soybean yields were similar ($P = 0.06$) for NT (3907 kg/ha), ST (3880 kg/ha), and RT (4005 kg/ha); however, PCT (4332 kg/ha) had a positive effect on soybean yields ($P = 0.05$). Spring grazing corn stalks did not have any effect on corn yields (13,250 vs. 13,275 kg/ha; $P = 0.72$). Additionally, soybean yields (4081 vs. 3987 kg/ha) were not different ($P = 0.12$) for grazed plots compared to ungrazed plots. In this study, utilizing pre-corn till had a negative impact on corn yield (13,726 vs. 11832 kg/ha; $P = 0.05$), and a positive impact on soybean yield (3931 vs. 4332 kg/ha; $P < 0.01$). However, grazing corn stalk residue at a 2.5 times stocking rate in the spring had no impact on corn or soybean yield. additionally, in this study, muddy conditions in the field that arise from spring grazing corn stalks had no effect on corn yield.

Key Words: Corn Stalk Grazing, Crop Yields, Tillage

833 Evaluation of storage methods for wet distillers grains plus solubles with forages and byproducts in silo bags and bunker silos. D. R. Adams*, T. J. Klopfenstein, and G. E. Erickson, *University of Nebraska, Lincoln*.

Two different experiments were conducted to determine methods to store traditional wet distillers grains plus solubles (35% DM; WDGS), because WDGS will not store in silo bags under pressure or pack into a bunker. The first experiment evaluated 3 forage sources as well as wet corn gluten feed (WCGF) or dry distillers grains mixed with WDGS. The product was mixed using feed trucks and was placed into a 2.74 meter diameter silo bag. During bagging, the bagger was set at a constant pressure of 21.09 kg/cm². The height of the silo bag was a determining factor of storability. While continuing to bag the product, adjustments to the inclusion level of the feedstuffs were made based on the shape of the bag. Inclusion levels ranged from 7.5% to 25% forages and 40% to 60% corn byproducts. The silo bag split open at the 7.5% grass hay: 92.5% WDGS and 10% grass hay: 90% WDGS levels and also at the 40% WCGF: 60% WDGS and 50% WCGF: 50% WDGS (DM basis). The recommended levels for bagging are 15% grass hay: 85% WDGS, 22.5% alfalfa hay: 77.5% WDGS, 12.5% wheat straw: 87.5% WDGS, and 50% dry distillers grains: 50% WDGS (DM basis). The second experiment was conducted by mixing grass hay with WDGS stored in a concrete bunker. Two ratios were evaluated including 30:70 and 40:60 grass hay: WDGS (DM basis). Both levels packed into the bunker with the skid loader. A skid loader with tracks, which was used in this experiment, may require less hay compared to commercial conditions using heavier equipment. In both experiments, the product was stored over 45 days and the apparent quality didn't change. Forages should be compared based on the fiber content, with lower amounts of forage needed for more fibrous feeds. Appropriate conversions to an as-is basis is important because WDGS contains 65% water, meaning the percentage of WDGS on an as-is basis will be even greater. In conclusion, WDGS can be stored in a silo bag or bunker silo when mixed with drier or bulkier feedstuffs.

Key Words: Forages, Storage, Wet Distillers Grains

834 Evaluating the Alabama beef quality assurance program. W. F. Owsley*, H. D. Dorough, and J. D. Gladney, *Auburn University, Auburn*.

The Alabama Beef Quality Assurance program reached 1100 beef producers in 2005 to 2006. To evaluate the educational component of the program, all participants were asked to complete a pre-test and a post-test. Three questions on the test were designed to further evaluate the understanding of the veterinarians' role in production. Each examination contained the same 20 questions. All questions were taken from the 2 hour Beef Quality Assurance oral presentation. The average score on the pre-test was 13.8 correct. On the post-test, producers averaged 18 correct answers. The most frequently missed question on the pre-test related to the ideal yield grade. Sixty percent of producers missed the question on the pre-test. Only 3 percent missed the same question on the post-test. Three questions asked about veterinarian-client-patient relationships and prescriptions. Fifty percent of the responses on the pre-test were incorrect, while only 21 percent of the responses to the post-test questions were incorrect. Based on the changes in test scores, beef producers appeared to have a better understanding of Beef Quality Assurance following the oral presentation. However, over 20 percent did not have a good understanding of the veterinarians' role and/or responsibilities.

Key Words: Beef Quality Assurance, Evaluation, Producers

835 Evaluation of a total ranch management workshop as an educational tool to transfer technology in Mexico. R. Teliz-Triujeque*^{1,2}, R. H. Williams², J. A. Ortega-Santos², C. W. Hanselka³, E. A. Gonzalez-Valenzuela¹, J. A. Hinojosa², and R. L. Stanko², ¹INIFAP, Mexico, ²Texas A&M University, Kingsville, ³Texas Cooperative Extension, Corpus Christi.

The total ranch management (TRM) planning process is an approach to help ranchers maintain better control of the ranch and its future, and is based on the idea of management achievements rather than specific management practices. The objectives of this study were to 1) evaluate the effect of a TRM workshop as a method of technology transfer, 2) determine impressions of participants, 3) determine extent of learning, and 4) determine comprehension and utilization of information. Mexican ranchers ($n=20$) interested in technology transfer attended a 6-d workshop taught by 6 U.S. instructors in 2 sessions. The information was divided into 8 themes and adapted from Texas Cooperative Extension's Total Ranch Management program. Participants were asked to complete a confidential 45-question survey to identify demographics and background knowledge of TRM issues and elements, a 9-question evaluation of each session and instructor, and a 13-question evaluation of the entire workshop. Eleven mo. after the workshop, ranchers were revisited to apply a 26-question, post evaluation survey. Workshop evaluations were analyzed using descriptive statistics and t-Test. Major enterprises of workshop participants included: cow/calf (63%), stockers (13%), registered cattle (57%), and wildlife (40%). Level of understanding of all topics was greater ($P<0.01$) after as compared to before the workshop. Total mean change in understanding concepts of strategic planning, ranch resources, economics, livestock production, wildlife management, and grazing management were 65, 48, 39, 54, 63, and 54%, respectively. TRM as a program has proved to be both a platform to convey and continue education and improve

decision making processes in ranch management. Mexican ranchers are welcoming through TRM a technology transfer mechanism that was not in place.

Key Words: Technology Transfer, Total Ranch Management, Mexico

836 Summary of the 2004 – 2005 University of Georgia Master Cattlemen’s Programs. T. W. Wilson*¹, J. E. Rossi¹, R. C. Lacy¹, M. E. Pence¹, J. Andrea², R. E. Silcox¹, D. Ensley¹, R. L. Stewart¹, J. W. Worley¹, N. C. Hinkle¹, and J. C. McKissick¹, ¹The University of Georgia, Tifton, ²Clemson University, Clemson, SC.

One hundred and seventy-six participants attended the four Master Cattlemen’s programs offered during 2004 and 2005 by The University of Georgia’s Beef Team. These programs incorporated speakers from six departments within two colleges. One multi-county program was offered during each six month period and was rotated within the four Extension Districts in Georgia. Each program met for a total of seven sessions that included either one or two speakers for a total of two hours. Program topics were customized by season and location. Participants received a notebook complete with materials from speakers, and those that attended five of the seven sessions received a program hat and a certificate of completion. Evaluations

were collected after the completion of three of the four programs, and a one year post-meeting survey was conducted with all four programs to determine impact. Across the three that were evaluated, the overall program was rated 4.5 (scale 1 to 5; 5 = best; n=80) and the average speaker evaluation was rated 4.2. The one year post-meeting survey (n=60) indicated that 95% of the respondents were commercial, while 5% were purebred operators. Sixty-eight percent of participants surveyed indicated that they derived 0 to 25% of their gross income from their beef operations; 27% received 26 to 50%; the remaining 5% received between 51 to 100%. Fifty-two percent of participants indicated they had an impact in revenue ranging from \$0 to \$5,000; 5% indicated they received from \$5,001 to \$10,000; 17% indicated no change in revenue from this program. When asked which of the management strategies they incorporated or made improvements in, 42% indicated improvements in record-keeping; 12% EPDs; 27% vaccinations; 27% feeding options; 38% pasture management; 35% reproduction; 22% fly control; 17% facilities; 20% hay storage; and 60% general herd management. Of the participants that returned the survey, 98% indicated that the information they received from this program improved their ability to successfully raise beef cattle, and 100% indicated that they would recommend this program to other beef producers.

Key Words: Beef Cattle, Extension Programming

Forages and Pastures - Livestock and Poultry: Grazing

837 Copper and Cu/Zn superoxide dismutase status in steers grazing three fescue types. R. L. Stewart, Jr*, G. Scaglia, W. S. Swecker, Jr., J. P. Fontenot, A. O. Abaye, J. H. Fike, M. A. McCann, and E. A. Wong, *Virginia Polytechnic Institute and State University, Blacksburg.*

During two consecutive grazing seasons, a study was conducted to measure Cu status of steers grazing three tall fescue (*Festuca arundinacea*) types: ‘Kentucky-31’ endophyte-infected (E+) and endophyte free (E-) tall fescues, and Q4508-AR542 non-ergot alkaloid-producing endophyte-infected tall fescue (Q). In 2004, forage Cu concentration was greater ($P < 0.05$) in E-. No differences in forage Cu were observed among treatments in 2005 ($P = 0.19$). In 2004, Cu intake was highest ($P < 0.001$) for steers grazing E- and lowest for E+ but was similar across treatments in 2005. Serum Cu was not different among treatments in 2004 ($P = 0.81$), but in 2005, serum Cu of steers grazing E- and Q was higher than E+ ($P < 0.05$). In 2004, liver Cu levels of cattle grazing E- were higher ($P < 0.05$) than for those grazing E+, while liver Cu levels of steers grazing Q were intermediate. No differences were detected among treatments in 2005 ($P = 0.86$). Enzymatic activity of Cu/Zn superoxide dismutase (SOD) did not differ among treatments in 2004 or 2005 ($P = 0.79$ and 0.80 , respectively). In 2004 and 2005, no difference in relative Cu/Zn SOD mRNA abundance was observed among treatments ($P = 0.33$ and 0.92 , respectively). These results suggest that lower Cu intake of steers grazing E+ and Q was related to lower DMI on these pastures. The lower Cu intakes likely contributed to differences in liver Cu. Endophyte status of forage did not affect Cu/Zn SOD enzymatic activity or relative mRNA abundance.

Key Words: Beef Cattle, Copper, *Festuca arundinacea*

838 Effects of clipping and implants on rates of hair growth and sweating, and rectal temperature of steers grazing endophyte-infected tall fescue. L. K. McClanahan*¹ and G. E. Aiken², ¹University of Kentucky, Lexington, ²USDA-ARS, Forage-Animal Production Research Unit, Lexington, KY.

The effects of hair coat clipping and steroidal implants on rectal temperatures, rates of sweating and hair growth of beef steers grazing endophyte infected tall fescue [*Schedonorus arundinaceus* (Schreb.) Dumort; Soreng et al., 2001] were determined. Steers were stratified by body weight and hair coat color before initiation of grazing on six, 3.0-ha pastures of endophyte-infected ‘Kentucky 31’ tall fescue on 3 May, 2006. Ten clipped and 10 unclipped steers were assigned to pastures as the two main plot treatments. Five steers in each pasture were implanted with Synovex-S (200 mg progesterone-20 mg estradiol) and five were implanted with Compudose (25 mg estradiol) and handled as sub-plots. Thirty to 40% of body surface of clipped steers was shaved with surgical clippers. A small area over the shoulder of all steers also was clipped to measure hair length growth rate and sweating rate (g/m²/h). These variables and rectal temperature were measured at 28, 56, 84, and 104 days of grazing. Rectal temperatures for clipped steers were not lower ($P > 0.10$) than for unclipped steers, except at 84 days when the highest mean ambient temperature (33°C) was recorded (clipped = 39.5°C, unclipped = 39.3°C; $P < 0.05$). Sweating rate declined ($P < 0.001$) as ambient temperatures increased. Sweating rates tended ($P > 0.10$) to be higher with the estradiol than the progesterone-estradiol implant. Hair growth rates averaged 0.28 mm/d and were unaffected ($P > 0.10$) by the treatments. Results indicated that retention of rough hair coats, continuous growth of hair, and a reduction in sweating rate at higher ambient temperatures are factors that contribute to the vulnerability of fescue cattle to heat stress during the summer.

Key Words: Tall Fescue, Fescue Toxicosis, Heat Stress