between 4-5th and the last rib of 6 barrows and 6 gilts of 3-way crossbred([Landrace × Large White] × Duroc) were cut into 18 slices with 2.5cm interval. Slice 1 was for 4-5th rib and slice 18 was for the last rib. High quality digital images of each section were taken by a mirror type camera for carcass cross section. For each section, nine traits were measured using an image analysis software (i.e., rib-eye area, fat area ratio, index of overall marbling coarseness, minor-major axis ratio, complexity of rib-eye shape, and RGBY values for rib eye color). At the same time, rib eye color (L*, a* and b* value) was measured with a colorimeter, and then the crude fat contents in rib eye was determined by chemical analysis for each slice. Correlation coefficients between Y and L* value, between the crude fat and fat area ratio were 0.825 and 0.740, respectively. The sections were classified into six positions by three slices backward from the front (e.g., position 1 = slices 1-3, position 6 = slices 16-18). Analysis of variance was performed by the SAS program for the image analysis traits as dependent variables and positions as fixed effects. Least square means (LSM) of the minor-major axis ratio for positions 1-6 were 0.62, 0.61, 0.58, 0.57, 0.49 and 0.39, respectively. Those of the fat area ratio were 3.80, 2.78, 2.13, 2.48, 2.50 and 3.24. Corresponding LSM of Y values were 121.59, 116.23, 112.06, 113.95, 115.19, and 117.72. From these results, rib-eye shape became flat toward the last position. Also the fat area ratio decreased in middle positions and then increased toward the last position. Marbling coarseness had the same trend with the fat area ratio. Brightness of rib eye was decreased in middle positions and then increased toward the last position.

Key Words: Pork, Image Analysis, Loin

Teaching/Undergraduate & Graduate Education

W369 Evaluation of Mississippi State University equine curriculum. M. Nicodemus* and K. Slater, *Mississippi State University*, *Mississippi State*.

With the growth of the equine industry, the demand for more university equine programs is increasing. Faculty has a challenge of trying to address the needs of the equine student as they prepare for jobs in a very diverse equine industry. To better develop a curriculum that meets the needs of the equine student, a survey was given to students (n=78) currently enrolled in equine classes at Mississippi State University. Questions addressed the students' background and interests concerning horses. The majority (74%) of students were Animal & Dairy Sciences majors with a science concentration with only 15% pursuing an equine management/production concentration. The majority of students had participated in or attended a horse show or clinic (69%) and had owned or family members had owned a horse (83%). 68% were planning on pursuing a career in the equine industry with 61% of those students choosing a veterinary career. Horse Science ranked first (41%) in equine classes that the students were currently taking or had taken followed by Equine Conformation & Performance Evaluation (20%). The majority (68%) of students indicated that they were taking equine classes because the classes "fulfilled a degree requirement" and the students "enjoyed horses", while 15% were taking classes just because they "enjoyed horses". Horse Science (17%) and Advanced Horsemanship (17%) were ranked as students' favorite equine classes in which both have a hands-on component. Equine Behavior & Training ranked the highest (23%) in equine classes the students wanted to take in the future followed by Western Equitation (19%) and Equine Reproduction (19%). Riding classes ranked the highest (58%) for recommended equine classes to add to the curriculum followed by an advanced horse science (35%). Overall, a hands-on component to the equine classes was a motivation for students taking an equine class. Laboratory components have been recently added to several of the equine classes to meet students' needs. Additionally, both Equine Reproduction and Advanced Horsemanship are only offered as a special topics class, but with favorable responses from this survey, these classes are currently being added to the curriculum.

Key Words: Horse Science, Teaching

W370 Development of an animal science managerial mentoring program. J. S. Pendergraft and B. T. Gutierrez*, *Sul Ross State University*, *Alpine, TX*.

The main goal of this project was to develop a managerial mentoring program for incoming animal science students. A model was developed to create a realistic workplace experience for animal science students outside of the classroom. The equine science program was divided into four specialized managerial areas: stables, nutrition lab, reproduction lab, and exercise physiology lab. One manager position with several specialized assistant manager positions were created. Additional staff positions were created under each assistant manager's area of responsibility. The equine science coordinator interviewed and hired the barn manager who in turn interviewed and hired the assistant managers. All hiring of positions were supervised by the equine science coordinator. All manager positions were renewable each year and staff positions were renewed each semester allowing for more diversity in a student's experience. A mentoring program for incoming equine science students was incorporated into the managerial model. The manager and assistant managers were responsible for mentoring their staff. Each incoming equine science student participating in the mentoring program committed 30 hours to each specialized area. Students successfully completing the mentoring program could choose to continue for a second semester of mentoring to gain more experience or apply for a mentoring position. During the first semester of the managerial mentoring program in the fall of 2006 three students participated as mentees. Two of these students are continuing the mentoring program during their second semester. One mentee chose to become a mentor during her second semester. The head manager/mentor obtained employment after graduation as a mare manager for a Thoroughbred farm in New Zealand. Eight new students entered the mentoring program during the spring of 2007. The main outcome from the Hispanic Serving Institute grant project was the development of a managerial mentoring model that can be used for any livestock program. The impact from this model was students were able to gain viable realistic workplace experience for the development of life skills that will be desired by future employees. Project progress can be found at: http://faculty.sulross.edu/jeffp/Equine/HSI.htm.

Key Words: Experiential Learning, Mentoring

W371 Animal welfare assessment scenarios as a tool for animal production industries. J. M. Siegford*, C. Daigle, M. Tubbs, T. Bernardo, C. R. Heleski, R. Malinowski, and R. Snider, *Michigan State University*, *East Lansing*.

Hypothetical comparative scenarios depicting welfare of animals in various scenarios have been developed at Michigan State University (MSU) to teach students to assess animal welfare. These welfare assessment scenarios have been used in collegiate Animal Welfare Judging Contests and in courses at MSU and other institutions. In addition to teaching students about animal welfare, the scenarios foster development of critical thinking skills and problem solving abilities. Scenario development begins by identifying a species or situation of interest and collecting scientific and management information from experts, in industry and academia, and through searches of the literature. The information is synthesized into a PowerPoint-type presentation with images and video to develop two realistic, yet fictitious situations which can then be compared. Animal industries could proactively address animal welfare issues by developing and using welfare assessment scenarios with a production emphasis. Such scenarios could help identify animals or situations where animal welfare could be improved and offer staff education in an area of increasing public concern. The scenarios can be tailored to emphasize management practices, facility design, veterinary care, or nutritional regimes for a particular species or production setting to identify areas for improvement and expansion. Welfare assessment scenarios could thus provide an unbiased internal assessment of current practices and conditions to facilitate any necessary internal changes directed at an individual worker, production unit, or entire facility. Scenarios could also be helpful in training new stockpersons by reinforcing proper animal practices related to meeting the needs of the animal physically, mentally and psychologically. By collaborating with industry to develop production-based animal welfare assessment scenarios, a positive relationship between the industry and MSU can be strengthened. The goals of such collaboration are to improve welfare of animals in production, support education for staff, and produce MSU students able to assess animal welfare based on scientific research and reasoning.

Key Words: Well-Being, Welfare, Education

W372 Poultry production demonstration: The effects of breeder hen's age on incubation, broiler growout and processing of broilers. G. M. Pesti*, R. I. Bakalli, and M. Y. Shim, *University of Georgia*, *Athens*.

The objectives of this laboratory exercise were to demonstrate: 1) the effects of the breeder's life cycle on fertility, hatchability and embryonic mortality patterns; 2) to compare the growth, feed efficiency and mortality of broilers hatched from large and small eggs laid by older and younger hens; and 3) to compare carcass characteristics of male and female chicks from two feedings programs. Average results from of 5 years of laboratories starting with 1080 eggs each from older hens (avg age = 63 weeks) and younger hens (avg age = 28 weeks) were: egg weight, 67 vs 54g; fertility, 80 vs 94%; hatch of eggs set, 71 vs 86%; chicks weight, 47 vs 38g; and mortality 7 vs 6%; for old hens vs young hens respectively. For the broiler grow out project, 30 chicks from each hen's age and chick gender were placed in 4 replicate pens (120 per treatment),and fed either a least cost diet (LC) with 16% protein and maximum profit (MP) diet with 24% protein. Average duration of broiler experiments was 40 days. Main effects means for chicks from old vs young hens were: body weight gain (BG), 2.35 vs 2.24 kg; feed conversion ratio (FCR), 1.74 vs 1.73 g feed/g gain; and mortality (M), 2.64 vs 4.17 %. Main effects of male vs females: BG, 2.45 vs 2.13 kg; FCR, 1.71 vs 1.75 g/g; and M, 4.19 vs 2.61. Main effects of diet were: BG, 2.26 vs 2.32 kg; FCR, 1.82 vs 1.64 g /g; and M, 4.03 vs 2.78%. Three chickens from each pen were randomly selected for processing. Main effects chicks source (old vs young hens) where: chilled carcass weight (CHCW) 72.5 vs 71.6%; abdominal fat (FP) 2.0 vs 1.8%; breast meat yield (BMY) 25.1 vs 24.8%; and leg quarters (LGW) 30.8 vs 30.7 %. Main effects male vs female where: CHCW, 72.7 vs 71.4%; FP, 1.7 vs 2.1%; BMY, 25.2 vs 24.6%; and LGW, 31.3 vs 30.2%. Main effects LC vs MP diets where: CHCW, 70.6 vs 73.5%; FP, 2.3 vs 1.5%; BMY 23.4 vs 26.4%; and LGW 31.3 vs 30.2%. The laboratory exercise described allows students to learn various techniques of incubation and husbandry while observing how breeder age, gender and type of feed influence incubation, broiler production and processing parameters.

Key Words: Education, Broilers, Processing

W373 Effect of management type, conventional versus organic, on production and culling in Southeastern Pennsylvania dairy herds. K. E. Griswold*[1], H. Karreman[2], and J. Mylin[3], [1]*Pennsylvania State University Cooperative Extension*, *University Park*, [2]*Penn Dutch Cow Care*, *Gap, PA*, [3]*Lancaster DHIA*, *Manheim, PA*.

The effect of management type, conventional versus organic, on production, health and culling was evaluated using Dairy Herd Improvement Association (DHIA) data from 68 dairy cattle herds in Southeastern Pennsylvania. Initially, 34 organically-managed (OM) herds were recruited for the study. Then, each OM herd was matched with a conventionally-managed (CM) herd of similar size and breed geographically located within a one-mile radius of the OM herd. These 34 matched pairs were selected to limit the effects of herd size, breed, local weather patterns and soil type on the results of the study. All herds used Lancaster DHIA services, and monthly DHIA 202 report data from 2006 were used for the study. Herds ranged in size from 22 to 105 cows with a mean size of 47 ± 6. Data were analyzed using PROC MIXED within SAS. While the majority of herds were Holstein, several (n = 9) of the OM herds were classified in DHIA as crossbred. As a result, the model included the fixed effect of management type with breed (Holstein versus Crossbred) nested inside management type. LS means with standard errors are presented in the table below. The results would indicate that OM herds produced less milk of poorer quality compared to CM herds. However, OM herds had greater milk component percentages, and lower culling rates compared to CM herds. The reduced culling rate resulted from less culling for reproduction and injury/other. Within OM herds, crossbreeding significantly lowered milk production and quality, but improved milk components and pregnancy rate. These results suggest that OM dairy herds face different production and health challenges compared to CM dairy herds, and the breed of cattle can further impact the production and health challenges in OM herds.

Table 1. Effect of management & breed on production & health

Item	Mgmt			Breed			P-value	
	Conv	Organic	SE	Holstein	Cross	SE	Mgmt	Breed
Milk, kg/cow/d	31.4	22.6	0.63	25.5	19.7	0.91	<0.0001	<0.0001
Fat, %	3.77	3.94	0.039	3.78	4.09	0.057	0.0039	0.0005
Protein, %	3.06	3.15	0.019	3.03	3.27	0.027	0.0021	<0.0001
SCS	2.94	3.29	0.090	3.12	3.46	0.132	0.0092	0.0853
Preg. rate, %	17.7	19.5	1.03	16.6	22.3	1.50	0.2307	0.0107
Cows left herd, %	32.5	27.0	1.74	26.8	27.2	2.54	0.0303	0.9181
for repro, %	7.3	4.2	0.90	6.7	1.8	1.27	0.0182	0.0116
for injury/other, %	5.7	2.9	0.95	3.8	2.0	1.38	0.0382	0.3736

Key Words: Organic, Conventional, Herd Health