

Katahdin [K]; and St. Croix [STX]) were assigned to two finishing diets (pen [PEN] vs. pasture [PAST]) and supplemented with 12% (LOW) or 18% (HIGH) CP. Lambs finished in PEN received chopped, moderate quality grass hay; whereas lambs finished on PAST were allowed to graze native, predominantly fescue pasture. Lambs were harvested, and carcass data and loin samples collected at 24 h postmortem. Loin were aged at 4°C for 14 d and frozen for subsequent Warner-Bratzler shear force (WBS) measurement. Data were analyzed as a 3 x 2 x 2 factorial design to evaluate the effects of breed, finishing diet, supplemental CP level, and all possible interactions. Hot carcass weight (HCW) and ribeye area (REA) were greater ( $P < 0.05$ ) for K than BB or STX. Carcasses from STX had heavier ( $P < 0.05$ ) HCW but smaller ( $P < 0.05$ ) REA than BB. Flank streaking was greater ( $P < 0.05$ ) for K and STX than BB. Leg scores and quality grades were greater ( $P < 0.05$ ) for K than BB or STX, which were similar. Body wall thickness was greater ( $P < 0.05$ ) for K and STX than BB. The three-way interaction between breed, finishing diet and CP supplementation was significant ( $P < 0.05$ ) for fat thickness. Fat thickness was higher ( $P < 0.05$ ) for K fed HIGH on PAST than K-PAST-LOW, K-PEN, or STX and BB regardless of finishing diet and CP level. Fat thickness was lower ( $P < 0.05$ ) for BB fed HIGH on PAST than K-PAST regardless of CP level or K-PEN-LOW. For WBS, HIGH increased ( $P < 0.10$ ) WBS in BB but CP supplementation level did not alter WBS for STX or K. Hair sheep breed influenced carcass quality with K having heavier HCW and greater quality grades. Finishing diet and CP supplementation only influenced fat thickness levels but did not alter other carcass variables.

**Key Words:** Lamb, Hair sheep, Tenderness

**T262 Characterizing exfoliative vaginal cytology (ECV) in ewes from 60 d of age through parturition.** G. Solis, J. I. Aguilera, R. M. Rincon, R. Bañuelos, and C. F. Arechiga\*, *Universidad Autonoma de Zacatecas, Zacatecas, Mexico.*

Present work try to characterize exfoliative vaginal cytology (EVC) from 60 d of age through parturition of Border-Leicester X Rambouillet lamb ewes from Mexican highlands of Zacatecas (22° 58' of north latitude and 102° 31' of west latitude above 2,153 m above the sea level). Vaginal smears (n=967), were obtained from ewes (n=8), from d 60 of age until parturition through different developmental stages: Pre-puberty, Puberty, Estrous Cyclicity, Pregnancy, Parturition. Papanicolau staining was performed to identify cellular types on vaginal smears. During the Pre-pubertal stage of ewe lambs (n=541 smears), basal (B) cells were mainly predominant followed by intermediate (I) and superficial (S) cells (B=84.62%; I=14.52%; S=0.41%). At the beginning of Puberty (n=8 smears), superficial cells were mainly predominant (B=1%; I=4%; S=84%), however, during the Estrous Cyclicity stage, (n=263), intermediate cells predominate with considerable populations of basal and superficial cells (B=23.1%; I=49.9%; S=26.62%). During Pregnancy (n=148 smears), there was an increase of intermediate cells (B=8.77%;

I=77.57%; S=11.95%). At Parturition (n=7), there was tendency to decrease intermediate cells and increase superficial cells (B=19%; I=38%; S=38.86%). Thus, we can conclude that in the Pre-pubertal stage there is a high population of basal cells. At the beginning of Puberty, there is high proportion of superficial cells (estrogen influence). During Estrous cyclicity there is a double amount of intermediate cells in comparison with basal and superficial cells (progesterone dominance). During Pregnancy, there is a high dominance of intermediate cells (high progesterone influence) and finally, at Parturition, there is a tendency to decrease intermediate cells (decreased progesterone) and to increase superficial cells (increased estrogens), until both cell types reach similar ratios.

**Key Words:** Ewe, Cytology, Vaginal Smears

**T263 Sexual behavior and interaction of hair rams as an auxiliary aid for estrus detection in bovine females.** C. F. Arechiga\*, M. G. Magallanes<sup>1</sup>, N. Nazarala<sup>1</sup>, R. M. Rincon<sup>1</sup>, J. A. Piña<sup>1</sup>, M. A. Lopez<sup>1</sup>, and J. Valencia<sup>2</sup>, <sup>1</sup>*Universidad Autonoma de Zacatecas, Zacatecas, Mexico,* <sup>2</sup>*Universidad Nacional Autonoma de Mexico, Mexico.*

Sexual behavior of hair rams (Black-belly, n=2) expressed by interaction with bovine females was evaluated as a possible auxiliary for visual estrus detection of cows included in artificial insemination programs. Bovine females (n=8), were dairy cows (n=3) and beef heifers (n=5). Sexual behavior of hair rams was evaluated on response to bovine-ovine interaction, to be used as ovine-teasers on estrus detection of bovine females, based on a previous adaptation period of 120 d. Then, bovine females were induced in estrus by a prostaglandin injection. 56 h post-administration of prostaglandins, hair rams were introduced into a pen with bovine females. Sexual behavior and interactions were recorded among both species by video-camera films. 100% of bovine females (8/8) were induced in estrus by 72.84 ± 5.12 h after prostaglandin injection. Estrus duration was 11.91 ± 5.64, bovine females performed 77 mounts, received 74 mounts, showed 12 anxiety signs and 6 cases of presence of vaginal mucus. In contrast, 42.9% of females (3 of 7), showed natural estrus 20.6 d after induced estrus. Performing 45 mounts, receiving 30 mounts, and 2 cases of presence of mucus without showing anxiety signs. Sexual behavior of hair rams in both types of estrus was: 20 courtships, 13 followings, 9 sniffings, 5 Flehmen reflexes, 3 territory markings, 2 masturbations and 2 homosexual mounts within male rams (adult and young rams). In conclusion, a hair ram is capable of showing sexual interest to bovine females in estrus. Such type of behavior, could help to visually detect bovine females in early estrus, independently of age (cows and heifers) or type (dairy and beef). Sexual behavior of rams seems to be acquired by a previous adaptation period of 120 d of interaction with bovine females.

**Key Words:** Estrus Detection, Sexual Behavior, Hair Sheep

## Extension Education

**T264 Financial performance of dairies in Florida and Georgia in 2002.** A. deVries<sup>1</sup>, R. Giesy<sup>1</sup>, L. O. Ely\*<sup>2</sup>, A. deAraujo<sup>1</sup>, A. Andreasen<sup>1</sup>, B. Broadus<sup>1</sup>, S. Eubanks<sup>1</sup>, D. Mayo<sup>1</sup>, P. Miller<sup>1</sup>, T. Seawright<sup>1</sup>, and C. Vann<sup>1</sup>, <sup>1</sup>*University of Florida, Gainesville,* <sup>2</sup>*University of Georgia, Athens.*

The Dairy Business Analysis Project (DBAP) includes an annual survey of the financial performance of dairies primarily located in Florida and Georgia. Its objective is to document the dairies financial success using standardized, accrual accounting methods in order to calculate benchmarks and provide feedback on the dairies financial strengths and weaknesses. Twenty-nine dairies submitted financial data in 2002. Twenty-seven dairies were included in the summary results. Of these, 18 were located in Florida, 8 in Georgia and one in Alabama. The average herd size was 1,168 cows and 583 heifers with 16,810 lbs. milk sold per cow. The average culling rate was 34%. There was an average of 20 FTE workers per farm and 1,010,000 lbs milk sold per FTE worker. Total revenue per cwt. was \$17.67 / cwt with \$16.05 / cwt milk income. The average total expense was \$17.88 / cwt. The largest expense items were purchased feed (\$7.00 / cwt), labor (\$2.88 / cwt), and livestock (\$1.04 / cwt). Net farm income from operations was on average \$-.21 / cwt and net farm income was \$-.10 / cwt. The debt to equity ratio was 1.10, the rate of return on assets was -0.02, the rate of return on equity

was -0.08, the operating profit margin was ratio was -0.03. There was no clear association between income, expenses or returns with herd size in 2002. Milk price / cwt was lowest for <500 cows (\$15.81) but other income was highest (42.25 / cwt) resulting in the highest total income (\$19.24 / cwt) and net farm income \$0.57 / cwt. Milk price, total income, total expenses increased with production level. net farm income was highest for medium production level.

**Key Words:** Dairy, Financial, Management

**T265 Factors affecting death losses in DHI holstein herds.** L. O. Ely\* and J. W. Smith, *University of Georgia, Athens.*

Dairy cow death losses are a significant economic loss for U. S. dairy farmers. This study examines the effect of several factors (yr, region, month of the yr, herd milk production level, and herd size) and the interaction of these factors on death losses in DHI Holstein herds. DHI herd summary records for the years 1999 through 2002 were sorted and classified by yr, region (Northeast, Midwest, Midsouth, South), month, milk production level (low[5443 to 7258 kg], medium [7258 to 9072] and high [ >9072]), and herd size (small[<100 cows], low medium [100 to 149], high medium [150 to 299] and large [>300]). Monthly death loss

percent (MDL) was calculated as the number of cows reported died per month / total cows in the herd per month \*100. Least squares means for MDL were compared by the Tukey option of SAS PROC GLM. The level of significance used was  $P < 0.05$ . MDL significantly increased each yr from .56 (1999) to .63 (2002). MDL differed significantly across regions with the lowest value in the Northeast (.47) and the highest value in the South (.67). MDL was lowest for high producing herds (.50) and highest for low producing herds (.67). MDL increased significantly from small size (.55) to large size herds (.67). MDL was highest during July to September across all regions. MDL was  $< .70$  during all mo in the Northeast. MDL was  $> .70$  during Aug and Sept in the Mid-south, ;  $> .70$  during Jul, Aug, Sept in the Midwest, and  $> .70$  during Aug, Sept, Oct, Nov, Dec, and Jan in the South. The South not only had the highest values but also the longest duration of high death loss. #8805#8804#8805#8804#8805#8805#8805#8805#8805#8805

**Key Words:** Cows, Died, Dairy Herd

**T266 SoutheastDairyExtension.org - An Internet-Based Dairy Website for Southeast US and Beyond.** G. W. Rogers\*, E. L. Tipton, K. M. Hill, and J. B. Cooper, *The University of Tennessee, Knoxville*.

Dairy Extension personnel in the southern United States need fast access to pertinent dairy-related articles on the Internet. A website, [www.SoutheastDairyExtension.org](http://www.SoutheastDairyExtension.org), sponsored by The University of Tennessee Dairy Extension program and the UT Department of Animal Science currently is providing this to dairy producers, Extension personnel, researchers and 4-Her's throughout the Southeast US. This is a database-driven website designed in Microsoft Access as a portal to the vast amount of web-based dairy industry information. Many prominent and information-rich links are being collected and key information from these are stored as database fields. Fields include the title of the information source, URL, author, state/country, year and a brief excerpt. Keywords, topic and subtopics (also fields) are assigned to each link. Topics pertinent to the Southeast, such as heat stress and heifer raising are featured. Other current topics include economics/marketing, facilities, genetics, grazing systems, health, mastitis/milking, nutrition, reproduction, waste management, and youth. Links include published dairy science papers, popular press articles, Internet-only information, and industry publications. Dairy statistics are available for twelve southern states as well as contact information for Dairy Extension personnel. Tip of the Month and Spotlight are two features on the home

## Teaching/Undergraduate and Graduate Education: Teaching

**T268 Comparison of evaluation methods for placement in a freshman equitation course.** K. Bennett-Wimbush\* and S. Porr, *Ohio State University, Agricultural Technical Institute, Wooster*.

The skill level of students enrolling in college riding courses is varied. It is often necessary to evaluate and rate students based on their reported previous riding experience and observed skills in order to place them in an appropriate riding group. This insures a more homogenous student group which should facilitate learning and skill development. The objectives of this study were to gather information on past riding experiences of college students enrolled in an equine science major and compare an instructor evaluation method of riding skills to a student self-evaluation method. One hundred and fifteen students were surveyed and evaluated over a three year period. Students completed a three page questionnaire with the last question asking them to rate their riding skills (SE) as one of the following: Pre-Beginner (1), Beginner (2), Advanced Beginner (3), Intermediate (4), Advanced-Intermediate (5), Advanced (6) or Professional (7). The course instructor then performed a mounted evaluation (IE) of each student using the same evaluation levels without knowledge of the SE. Differences in ratings between SE and IE were determined by Chi square analysis. Additionally the difference in means was analyzed using Proc Means, SAS. Students reported having an average of 7.9 years of riding experience. SE ratings were higher ( $p < .01$ ) than IE. More students rated themselves Advanced-Intermediate (34.86%) while the most common rating from IE was Intermediate (29.36%). SE yielded .92% (1), 8.26% (2), 11.92% (3), 25.69% (4), 34.86% (5) and 11.93% (6). The SE and IE were in agreement for approximately 38% of the students, while 45% of the surveyed students overrated their riding ability compared to the IE, 11% of the students underrated their ability and 6%

page that are updated regularly. A fast-results keyword search is embedded in this application. To keep the site up-to-date, visitors can suggest new links by clicking the "Suggest Link" button that is on each page. They may also submit additional suggestions and content by using an on-line form provided at the site. UT Extension professionals are able to submit all information for each link to this database via a user-friendly form, often by cutting and pasting from an actual Internet-based document.

**Key Words:** Dairy, Extension, Internet

**T267 Association between bulk tank milk urea nitrogen and DHI production variables in California dairy herds.** G. E. Higginbotham\*<sup>1</sup>, W. R. VerBoort<sup>2</sup>, and J. E. P. Santos<sup>3</sup>, <sup>1</sup>*University of California Cooperative Extension Fresno/Madera Counties, CA*, <sup>2</sup>*California DHIA Fresno, CA*, <sup>3</sup>*School of Veterinary Medicine, University of California, Davis, Tulare*.

A retrospective study from January, 2001 to December, 2003 was conducted using data from DHI monthly tests to investigate the relationship between daily bulk tank milk urea nitrogen (MUN) concentration and selected DHI production variables from selected Holstein (N=40) and Jersey (N=31) herds located in the central valley of California. Average herd size and rolling herd average (RHA) for milk were 1,123 cows and 10,106 kg, respectively, for Holstein herds, and 730 cows and 7,412 kg, respectively, for Jersey herds. Data were analyzed using regression analyses and the MIXED procedure of the SAS (2001) program. Concentrations of MUN averaged 12.2 and 12.1 for Holsteins and Jerseys ( $P=0.34$ ). Concentrations of MUN were negatively correlated with percentage of casein and true protein ( $P < 0.001$ ) in milk for Holsteins and Jerseys, but the relationships were weak ( $r^2 < 0.036$ ). Bulk tank MUN was not associated with average milk yield per cow ( $P=0.11$ ). However, MUN was negatively correlated with true protein ( $r^2=0.0033$ ;  $P < 0.001$ ) and casein ( $r^2=0.0034$ ;  $P < 0.001$ ) in milk of Holsteins and Jerseys ( $r^2=0.027$ ;  $P < 0.001$ ). Time of season effected concentrations of MUN being significantly ( $P < 0.001$ ) lower during the winter for both Holstein and Jersey herds and significantly ( $P < 0.001$ ) higher during months of heat stress. Test day somatic cell count (SCC) as mean SCC and as linear score showed a negative non-linear relationship with MUN for both breeds.

**Key Words:** MUN, DHI, Dairy

of the students failed to rate their skills. This supports the use of instructor evaluations of student self-evaluations for proper placement in riding classes.

**Key Words:** Student Survey, Evaluation, Horse-Back Riding

**T269 Integrating leadership, communications, and service learning education to prepare future leaders in the animal sciences.** D. R. Brink\*, L. D. Moody, and B. S. VanDeWalle, *University of Nebraska, Lincoln*.

Leadership and communications are very beneficial areas of study for Animal Science students. These areas have been included in a program at the University of Nebraska called the Animal Science Leadership Academy (ALA). The program is lead by a professor of Agricultural Leadership Education and Communication and a professor of Animal Science with the assistance of a graduate student. In ALA, there are many different activities for students to obtain leadership experience in business and industry. In the first semester of ALA, students shadow professionals in three different career options, develop a professional presentation and a portfolio of their professional development. Furthermore, as freshmen, ALA students attend the ASAS and ADSA Midwestern Sectional Scientific Sessions. During the second semester, ALA students learn about service learning and develop individual and group service-learning projects. During the third and fourth semesters of ALA, students implement their service learning proposals while also attending sessions focusing on internships and leadership development plans for the remainder of their undergraduate study. In four, 1-credit hour courses a variety of methods are used. Class projects and papers