

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, 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*¹, W. R. VerBoort², and J. E. P. Santos³, ¹*University of California Cooperative Extension Fresno/Madera Counties, CA*, ²*California DHIA Fresno, CA*, ³*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

are designed to build experience for future careers and to create network contacts for future opportunities. Ideas and projects are developed in groups to build communication and interpersonal skills, helpful in a future work environment. Guest speakers provide business and industry perspectives on leadership and communications topics. A survey of ALA students indicated job shadowing was the most beneficial activity of ALA and students agreed they were able to demonstrate leadership

within their classes and student organizations. The partnership of faculty from different departments, business and industry professionals, and students in ALA provides a unique opportunity for Animal Science students to be prepared for leadership positions.

Key Words: Undergraduate, Leadership, Education

Dairy Foods: Chemistry

T270 Storage stability of lutein in cheddar cheese. S. T. Jones*, K. J. Aryana, and J. N. Losso, *Louisiana State University, Baton Rouge.*

The etiology of age-related macular degeneration (AMD) is complex; however, risk factors include genetic and environmental stimulus. As standard therapies for macular degeneration are limited, costly, and often associated with undesirable pathological side effects, the role of nutrition in protecting against AMD is intensively under scientific consideration. Lutein (3,3-dihydroxy- α -carotene) has been identified as a dietary strategy that can delay the onset of AMD. However, available food sources of lutein contain small amounts of lutein. Food fortification with lutein extract has been identified as a low budget prescription to prevent the onset and/or progression of AMD. The objectives of this study were to 1) incorporate various amounts of lutein into cheddar cheese; 2) analyze the stability of lutein during the cheese aging process; and 3) examine the color, pH, and microbiological profile of the cheddar cheese during storage. Lutein, extracted from corn was added to cheddar cheese in quantities of 1 mg, 3 mg, and 6 mg. Measurements of the lutein stability were carried out by HPLC using a YMC C₃₀ carotenoids column. Microbiological analyses of cheese samples included counts using SPC, Coliform, and Y/M Petrifilm. The attributes studied on the cheese were color and pH. The color attribute a* ($p < 0.05$) was significantly different among the treatment and control groups; however no significant difference were observed in L*, b*, and pH values. A significant difference ($p < 0.05$) among 1 mg, 3 mg, and 6 mg treatments were observed in the SPC with respect to the control. The cheese samples were found not to have any coliforms (< 10 cfu/g) and Y/M (< 10 cfu/g). HPLC data showed quantitative recovery of lutein during the storage period and no lutein degradation products were identified. These results indicate that lutein, a functional food with purported ability to prevent or reduce the onset of macular degeneration; can be added to cheese as a value-added product.

Key Words: Lutein, Cheese, Age-Related Macular Degeneration

T271 Physical properties of κ -casein stabilized emulsions. R. Richter, P. Ungkuraphinunt*, A. Gerung, and G. Perez-Hernandez, *Texas A&M University, College Station.*

The objective of this study was to determine the physical properties of emulsions stabilized with κ -casein. κ -casein was separated from acid casein using ion-exchange separation (Cayot et al. 1992). Emulsions containing 0.3% κ -casein and 3% butteroil were heated to 65°C and homogenized at 20, 60 and 100 MPa. Particle size distribution, rheological properties, heat stability, and the effect of rennet on the coagulation properties of the emulsions were studied. Storage stability was determined by measuring the particle size at the top and bottom of emulsions after 1, 7 and 14 days of storage. Particle sizes (dvs) of the emulsions were 0.738, 0.291 and 0.115 μ m for emulsions homogenized at 20, 60 and 100 MPa respectively. The homogenization pressure did not affect the viscosity of the emulsions, the average viscosity was 1.20 cP and emulsions had a Newtonian behavior. The addition of rennet caused the mean viscosity to increase from 1.20 to 3.74 cP. Significant differences in particle size were not found in the emulsions after heating. Emulsions homogenized at 100 MPa were more stable than emulsions homogenized at 20 and 60 MPa during the storage period. κ -casein can be used to prepare stable emulsion with butteroil.

Key Words: κ -Casein, Emulsion Stability, Physical Properties

T272 Probiotic, fiber fortified, fat free plain yogurt. K. J. Aryana*, *Louisiana State University Agricultural Center, Baton Rouge.*

Probiotic bacteria exert benefits on the gastrointestinal health. High fiber intakes lower the risk of coronary heart disease and certain cancers. The objective was to determine whether or not the incorporation of a combination of probiotic bacteria and fibers impact the physico-chemical and sensory characteristics of fat free plain yogurt. Six different fibers namely Fibergum, Fibersol, Benefiber, Hydrobind, QC-40 and Inulin (ST-Gel) were incorporated at the rate of 1% w/v separately in the yogurt mixes. The total solids were kept constant in the control with non fat dry milk. Yogurt mixes were homogenized, batch pasteurized, cooled and yogurt culture (*Lactobacillus bulgaricus* and *Streptococcus thermophilus*) was added. This was immediately followed by further inoculation of the mix with a probiotic culture containing *Lactobacillus acidophilus*, *Bifidobacterium*, and *Lactobacillus casei*. The inoculation rates with probiotic bacteria were 0, 0.02% v/v mix. The yogurt attributes studied were syneresis, viscosity, pH, color (L*, a*, b*), sensory flavor, body and texture and appearance. Yogurts manufactured with Hydrobind exhibited significantly ($p < 0.05$) the least amount of syneresis (released whey) followed by Benefiber. The use of the remaining fibers resulted in syneresis which were not significantly different from the control. Yogurt manufactured with Hydrobind was significantly ($p < 0.05$) the most viscous compared to the control yogurt and yogurts with other fibers. The pH of the yogurts were not significantly ($p < 0.05$) impacted by the incorporation of the above mentioned fibers. Yogurts with Fibersol, Benefiber and QC-40 had significantly ($p < 0.05$) higher L* (Lightness) values compared to the other yogurts. Significantly highest a* and b* values were recorded for yogurts manufactured with Hydrobind and Benefiber respectively. Flavor and body and texture scores for yogurts with ST-Gel, QC-40 and Fibersol were not significantly ($p < 0.05$) different from the control. The appearance scores of yogurts with Fibergum and ST-Gel were high and did not differ significantly ($p < 0.05$) from the control. Probiotics along with different fibers favorably impacted different attributes of fat free yogurts.

Key Words: Health, Fermented, Dairy

T273 Fat free plain set yogurts fortified with minerals. K. Achanta*¹, K. J. Aryana², and C. Boeneke², ¹*Louisiana State University*, ²*Louisiana State University Agricultural Center.*

The health benefits of various minerals are well documented in literature. Whether or not the incorporation of various minerals impacts the physico-chemical characteristics of yogurt is not clearly understood. Seven different minerals namely, iron, magnesium, zinc manganese, molybdenum, chromium and selenium were incorporated separately into the yogurt mixes at 25% of their respective recommended dietary allowances. The various attributes studied on the yogurts were viscosity, color (L*, a*, b*), pH, syneresis, flavor, body, texture and appearance. No significant difference was observed in viscosity, color (L*, a*, b*), pH, syneresis, body, texture and appearance for yogurts fortified with minerals when compared to the control yogurt. The flavor scores of selenium fortified yogurt were significantly lower from that of the control yogurt. Fortification of yogurts with the above mentioned minerals can be accomplished without adversely affecting the product characteristics.

Key Words: Health, Dairy, Fermented