

344 The effect of live yeast (*Saccharomyces cerevisiae*-1026) on rumen fermentation parameters and blood metabolites of sheep. M. Nowrozi*¹, M. Danesh Messgaran², and M. Abazari¹, ¹*Agriculture and Natural Resources Research Center of Khorasan, IRAN, Mashhad, Khorasan, Iran,* ²*Ferdosi university, IRAN, Mashhad, Khorasan, Iran.*

In order to examine the effect of live *Saccharomyces cerevisiae*-1026 on rumen fermentation parameters and blood metabolites, four rumen fistulated Balouchi lambs at approximately 6 months of age and mean weight of 35±4 kg were randomly assigned to two treatment groups in a change-over split-split plot design. Treatments were: H) High fiber diet (30% concentrate + 70% hay), HY) H + 4 g Yeast /head/d, C) High concentrate diet (70% concentrate + 30% hay) and CY) C + 4 g Yeast /head/d. Yeast supplement contained 1-1.5×10¹⁰ live cells per gram with 96.6% of dry matter and 46% of crude protein. Blood and ruminal fluid samples were collected over a 108 d period at 27 d intervals (including: 10 d of transition period, 14 d of adaptation to the new diet and 3 d of sampling). Yeast culture did not have considerable effect on ruminal fluid of lambs fed HY diet; only it slightly increased the pH from 6.38 to 6.58 during 3 h after feeding, besides, in lambs received CY diet, two hours after feeding a slight increase (P<0.1) was observed due to yeast function (6.05 to 6.22). Both HY and CY treatments significantly affected the ammonia concentration of ruminal fluid; HY decreased (P<0.05) the ammonia contents of ruminal fluid during 1 to 4 h after feeding and CY showed similar effect during 0.5 to 3 h after feeding. Blood urea was significantly decreased 3 h after feeding by HY diet when compared with animals fed H diet (10.72 vs. 13.76 mg/dl). CY significantly prevented the blood urea from increasing two hours after feeding in comparison with C treatment (10.69 vs. 13.74 mg/dl). The production of microbial protein exhibited slight increase in HY treatment (7.48 vs. 6.03 g) and for CY, its increase was not significant (5.85 vs. 5.53 g). The results of present study demonstrate that yeast may increase the efficiency of feed due to increased ammonia consumption by microorganisms existed in rumen.

Acknowledgements: Authors would like to thank Agricultural and natural Resources Research Center of Khorasan, Iran for funding this project.

Key Words: *Saccharomyces Cerevisiae*, Rumen Fermentation, Sheep

345 Effect of two beta-adrenergic agonists and low energy diet on carcass composition, adipose cell size, blood hormones and metabolites in an Iranian fat-tailed breed of sheep. M. Nowrozi*¹, M. Abazari¹, M. Raisianzadeh¹, A. Zare Shahne², and M. Mohammadi³, ¹*Agriculture and Natural Resources Research Center of Khorasan, Mashhad, Khorasan, Iran,* ²*Tahran University, Karaj, Tahran, Iran,* ³*Guilan University, Rasht, Guilan, Iran.*

Effects of terbutaline (T), metaproterenol (M) and low energy diet (LE) on carcass composition, adipose cell size, blood hormones and metabolites of 72 Moghani culled ewes were evaluated in a completely randomized design for three months. In the first month, ration (12.14 MJ/kg DM) was similar for seven groups and the eighth group was fed low energy ration (10.71 MJ/kg DM) in the whole of study. Diets were fed ad libitum. After 30 days terbutaline and metaproterenol were added to the ration each one at three doses of 5, 10 and 20 mg/kg DM for 60 days. Data were analysed by SAS (1992) and means were compared with LSMEAN. T10 (10 mg/kg DM terbutaline) and M20 increased (P<0.05) final and cold carcass weights of ewes. LE ewes had lower daily dry matter intake than controls (1126 vs. 1500 g/day). Except for T5 and LE, all beta-adrenergic treated groups showed improved (P<0.05) gain:feed of 17.6 to 26.9% compared with controls. Increased (P<0.05) carcass efficiency was obtained by M5, M10 and M20 relative to controls (49.94, 50.07 and 50.64% vs. 46.31%). Total carcass crude protein was higher (P<0.05) for ewes receiving the M20. Ewes treated with T20, M5, M10, M20 and LE had lower (P<0.05) fat-tail weight than controls (3.64, 3.55, 3.54, 3.52, 3.99 kg vs. 4.52 kg). Both beta-agonists and low energy diet resulted in lower (P<0.01) adipocyte mean diameter. Plasma insulin concentration was 24% and 50% lower for M5 ewes than controls on days 30 and 60 respectively. Blood urea concentration was reduced by LE treatment 12.5 and 23.8% on days 30 and 60 respectively. In the second month, plasma T4 concentration was increased (P<0.05) by middle dose of both beta-agonists but in the next month this effect disappeared. Metaproterenol, terbutaline and low energy diet had significant effect on plasma triglyceride, cholesterol, HDL and LDL concentrations. Results indicated that metaproterenol causes a repartitioning of nutrients resulting in improved gain:feed, increased carcass meat and lowered weight of fat tail.

Key Words: Beta-Agonist, Terbutaline, Metaproterenol

Teaching/Undergraduate and Graduate Education: Scholarship of Teaching as Related to Promotion and Tenure

346 The scholarship of teaching and learning: The synergy of scholar and teacher. W. M. Schlegel*, *Indiana University, Bloomington.*

“What we urgently need today is a more inclusive view of what it means to be a scholar – a recognition that knowledge is acquired through research, through synthesis, through practice, and through teaching.”

Ernest Boyer (1990) *Scholarship Reconsidered, Priorities of the Professoriate.*

We continue in the 21st century to struggle with what it means to be a scholar and how scholarship is recognized and rewarded. With vast commitments to our discipline, institution, students, colleagues, family, community, and efforts to be global citizens, we struggle to find a balance and to do so within a system of institutional rewards that has not yet caught up with the interdisciplinary and integrative view of scholarship. Scholarship and teaching have been considered antithetical rather than synergistic. The scholarship of teaching and learning [SOTL] integrates the intellectual efforts of research and teaching. Integration of the fundamental and cutting-edge questions of a discipline with how those questions are conceived, represented, understood, and applied allows for the synergy of disciplinary scholar and teacher resonating a scholarship that is greater than the sum of its individual parts. This scholarly synergy affords a creative synthesis of ideas that enhances and renews our disciplinary thinking and teaching. SOTL is problem posing, aided by methods appropriate to disciplinary epistemologies, with application of results to practice, communication of re-

sults, self-reflection, and peer review and it is a process that facilitates advancement of the profession of teaching (Shulman & Hutchings, 1999). This endeavor is quite different from the pursuit of excellence in teaching and scholarly teaching. This presentation will address these differences as well how SOTL is being represented by individual faculty, disciplines, and institutions with mention of an emerging international society to support this work. Examples illustrating this view of a synergistic relationship between research and teaching will be introduced with a discussion of how this synergy enhances the efforts of both endeavors providing a larger context for the work.

Key Words: Teaching, Learning, Scholarship

347 Promotion and tenure on the basis of excellence in teaching: An institutional perspective. L. Connor*¹ and J. Armstrong², ¹*University of Florida, Gainesville,* ²*Michigan State University, East Lansing.*

Excellence in teaching must be achieved in the prevailing institutional culture (beliefs, values, rules, and processes). Both faculty and administration must be involved in this quest. Teaching must be placed on the same plane as research/extension with no preferential treatment. To attain an appropriate teaching culture, the following institutional actions should be considered: 1) teaching

workload guidelines need to be implemented to minimize inequities between units; 2) faculty performance should be evaluated on the basis of assigned responsibilities, with teaching, research, and extension valued equally; 3) teaching quality/output indicators need to be specified, such as student teaching/counseling evaluations, awards, teaching publications, unique teaching methods, teaching portfolios/peer evaluation, professional workshops, teaching committees/task forces, and workloads; 4) faculty/unit bias in the T & P process must be mitigated by administration and appropriate peer committees at the unit and college level; 5) college/university teaching reward systems must recognize outstanding undergraduate/graduate teaching and advising (where possible, development efforts should be geared toward this endeavor); 6) college teaching portfolios/peer evaluations should be included in the T & P and teaching award processes; 7) faculty development seminars/workshops need to be regularly offered to enhance teaching/advising and faculty cohesiveness; 8) faculty research and publishing on teaching should be encouraged; 9) faculty participation on teaching committees/task forces needs to be stressed, while minimizing the number of such groups; 10) some open position salary funds should be allocated to updating teaching labs/equipment and mini-grants; 11) faculty teaching internships (ACOP and university) should be encouraged to develop administrators and broaden faculty perspectives; 12) faculty should be encouraged to regularly take sabbaticals to update disciplinary knowledge and teaching skills; 13) academic deans/unit chairs need to respond to changing trends/paradigm shifts impacting teaching.

Key Words: Rewarding Teaching, Teaching Excellence, Faculty Performance

348 Promotion and tenure on the basis of excellence in teaching: A faculty perspective. M. Wattiaux*¹ and J. Moore², ¹University of Wisconsin, Madison, ²North Carolina State University, Raleigh.

With a renewed emphasis on their educational role as institutions of learning and teaching, many universities are revising guidelines for tenure and promotion of assistant professors with major teaching appointments. During the hiring process, a candidate should obtain in writing an up-to-date list of expectations and modes of assessment. Unfortunately, guidelines for tenure and promotion based on "excellence" in teaching are often described vaguely. They rarely distinguish "excellence" from "expertise" or "scholarly activity" in teaching. This lack of clarity combined with a lack of pedagogical training during graduate school may make it difficult for a newly hired individual with a major teaching appointment to find a focus. Thus, each institution should develop clear and specific guidelines that are congruent with its mission statement to help future teaching faculty members understand the standards against which they will be evaluated. Teaching faculty should excel in their teaching and (or) should have a record of accomplishment in Scholarship of Teaching and Learning (SoTL). If "research in teaching" is an expectation, then the newly-hired faculty members should be given support to integrate SoTL successfully into their academic careers such as time to develop teaching proposals and grants and funding for a teaching or research assistant dedicated to the SoTL. Demonstrated impact can be done at the national, regional, campus, college, departmental or classroom level. Examples include but are not limited to authorship of peer-reviewed publications, abstracts or invited presentations, teaching-related grants, developing and (or) leading sessions in teaching-related workshops, seminars or conferences, new course development, peer-review (and student evaluation) of classroom activities and syllabi, and peer-review of electronic educational packages (web or CD). The proper assessment of a teaching program is a rigorous process in part because of its multi-faceted nature. The SoTL offers genuine opportunities for enthusiastic instructors willing to pursue systematic improvement in student learning and the quality of teaching in their institution.

Key Words: Teaching, Scholarship, Tenure

Breeding and Genetics: International Evaluation of Dairy Bulls—In Honor of Dr. Rex Powell

349 Dr. Powell's contribution to international comparison of dairy bulls. F. Miglior*^{1,2}, ¹Agriculture and Agri-Food Canada - Dairy and Swine Research and Development Centre, Lennoxville, QC, ²Canadian Dairy Network, Guelph, ON, Canada.

Dr. Powell wrote his first article on conversion equations between Canada and US in a popular press magazine in 1979, several years before Interbull was created and preliminary methodology of international comparison were developed. In that article he concluded that the international scientific community needed to provide guidance to users of sire evaluations across national borders, though derived equations were not as near perfect as would be desired. Four years later Interbull was created and Dr. Powell has been a member of the Interbull Steering Committee in 18 of the last 21 years. Dr. Powell is an international leader in collaborative efforts to coordinate genetic evaluations of dairy cattle and to enhance genetic improvement on a global basis. Apart from his strong contribution to the improvement of national genetic evaluations in US, Dr. Powell has worked extensively to develop genetic evaluations in several countries. Dr. Powell conducted the most extensive comparison of methods for converting genetic evaluations of dairy bulls among countries. His most relevant findings were: a) importance of correct definition of genetic groups; b) impact of different criteria for data editing and inclusion in international evaluations; and c) presence of bias when imported data were included in evaluations. Once Interbull MACE evaluations became available in 1995, Dr. Powell carried out many projects that have helped to increase the accuracy of international bull evaluations. Recently his focus has been on outlining the impact of genetic correlations among countries on accuracy of sire rankings. His findings have increased international awareness of the importance of improved estimation procedures

of genetic correlations and in 2004 an Interbull Technical Workshop was devoted to this topic.

Key Words: International Evaluations, Conversion Equations, Interbull

350 Country bias in international dairy bull evaluations. R. L. Powell*, A. H. Sanders, and H. D. Norman, *Animal Improvement Programs Laboratory, Agricultural Research Service, USDA, Beltsville, MD.*

The International Bull Evaluation service combines national dairy bull evaluations and provides results on each participating country scale. Theoretically, this process is designed to avoid favoring one country relative to another, but this concern has been raised frequently by international marketers of bull semen. Existence of a bias is difficult to assess; one approach is to compare evaluation results for full brothers from different countries. On average, these full brothers have the same genetics and should have similar evaluations. Over 12,000 Holstein bulls in 4336 full-brother families linked yield evaluations from 20 countries having bulls in at least 25 multi-country families. Slightly fewer bulls and families were in 16 countries with SCS data. The model analyzed with SAS[®] GLM included fixed effects of full-brother family (absorbed) and home country, where home country was the country of most daughters. To improve estimates of within-family variation, 6761 single-country families were also included. Primary analyses were on the US scale but results were similar on other scales. Full brothers from several countries had significantly higher evalu-