

520 Wool quality and growth traits of Tasmanian pasture-fed crossbred lambs and relationships with plasma metabolites. A. E. O. Malau-Aduli*, C. F. Ranson, and C. W. Bignell, *University of Tasmania, Hobart, Tasmania 7001, Australia.*

Wool quality, growth and plasma metabolite traits of 500 F₁ progeny from Merino dams sired by 5 ram breeds were investigated to study the influences of sire breed, sex and their interactions with plasma metabolites aimed at dual-purpose crossbreeding options. Coopworth, Texel and White Suffolk sired progeny had significantly ($P < 0.05$) heavier weaning weights (WWT) and average daily gains (ADG) than those sired by Dorset or East-Friesian rams. Coopworth-sired sheep had the highest WWT (31.3 ± 1.7 Kg) and East-Friesian sired sheep the lowest (22.9 ± 3.1 Kg) with ADG ranging from 0.15 kg/day in East-Friesian to 0.23 Kg/day in Texel and White Suffolk sire breeds. Highly significant ($P < 0.01$) sex by sire breed interaction were evident; Coopworth-sired ewe lambs had the highest WWT and ADG (34 Kg, 0.27 Kg/day) and Dorset-sired ewe lambs the least (22 kg, 0.15 Kg/day). Greasy fleece weight ranged from a minimum of 964 g to a maximum of 1303 g in Dorset and Coopworth-sired lambs respectively, with Coopworth and Texel sire breeds having significantly heavier ($P < 0.05$) fleece weights than either Dorset, White Suffolk or East-Friesian. Texel-sired sheep had significantly larger ($P < 0.05$) micron fibre diameter ($23.4 \mu\text{m}$) than the $21 \mu\text{m}$ recorded in White Suffolks and East-Friesians. There were also highly significant differences ($P < 0.01$) between sire breeds in staple length (range 50-68 mm) and staple strength (range 39-52 Nktx), with males having finer fibre diameter (21 vs $23 \mu\text{m}$) and shorter staple length (55 vs 60 mm). Regardless of sire breed or gender, blood plasma metabolites were well within the normal range. A strong, positive and significant phenotypic correlation of 0.72 existed between marking and weaning weights. There were no significant correlations between the wool quality and growth traits, essentially implying that producers can select for finer wool without compromising growth. Coopworth x Merino first cross was the overall best performing sheep breed studied because of its heavier liveweight, faster daily gain, heavy fleece weight and a comparatively lower micron fibre diameter than the other crossbreds.

Key Words: Tasmanian crossbreds, wool quality, plasma metabolites

521 Bayesian estimation of genetic parameters for body weight traits and litter size of Moghani sheep using Gibbs sampling. N. Ghavi Hossein-Zadeh*^{1,2}, ¹University of Tehran, Karaj, Iran, ²University of Guilan, Rasht, Iran.

The objective of the present study was to estimate genetic parameters for body weights at different ages and litter size in Moghani sheep. Traits were included birth weight (BW), 3 months weight (3MW), 6 months weight (6MW), 9 months weight (9MW), yearling weight (YW) and litter size (LS). Data and pedigree information used in this research were collected at Breeding Station of Moghani sheep (Ardebil, Iran) during 1987–2005. Linear and threshold animal models with additive genetic, maternal genetic, maternal permanent environmental and residual effects were implemented by Gibbs sampling methodology. A single Gibbs sampling with 100,000 rounds was generated by the MTGSAM program. The posterior means of genetic parameters were estimated based on the 900 samples that were left after elimination of 10,000 rounds in the burn-in period and 100 rounds of each thinning interval. Posterior means of direct heritability estimates for BW, 3MW, 6MW, 9MW, YW and LS were 0.29, 0.13, 0.14, 0.10, 0.31 and 0.10, respectively. Posterior mean estimates of maternal heritabilities were 0.29 for BW, 0.08 for 3MW, 0.11 for 6MW, 0.06 for 9MW, 0.10 for YW and 0.17 for LS. All the posterior mean of phenotypic correlation estimates among body weight traits at different ages were positive and changed from 0.08 to 0.68. But, the estimates of phenotypic correlations between litter size and body weights were negative and ranged from -0.69 to -0.08. A moderate negative direct genetic correlation has been estimated for 9MW-YW, but the estimates of direct genetic correlation between other body weight traits were positive and ranged from 0.08 to 0.88. But, there were negative medium to high direct genetic correlations between body weights at different ages and litter size, ranging from -0.92 to -0.28. Thus, selection for increased growth or LS may have a negative genetic effect on the other trait. The medium to high negative estimates of direct-maternal correlations for body weight traits or litter size suggest that it would be difficult to jointly improve direct and maternal growth ability for Moghani sheep.

Key Words: Bayesian inference, Moghani sheep, body weight

Dairy Foods: Dairy Foods/Microbiology

522 Molecular and technological characterization of lactic acid bacteria isolated from the Egyptian white pickled cheese. M. El Soda*, M. Mohammed, S. Anwar, and S. Awad, *Department of Dairy Science, Faculty of Agriculture, Alexandria University, Alexandria, Egypt.*

Egyptian white pickled cheese samples were collected from different areas in Egypt. One hundred isolates obtained from the cheese samples were identified using repetitive genomic element-PCR (Rep-PCR) fingerprinting. The identified isolates were tested for efficiency of biomass production and separation, acidifying activity, autolytic, aminopeptidase and antagonistic activities and exopolysaccharide production. The obtained results revealed that *Enterococcus faecium*, *Enterococcus faecalis*, *Lactobacillus paracasei* subsp. *paracasei*, *Lactobacillus plantarum* and *Lactobacillus delbrueckii* subsp. *lactis* were the predominant species in Egyptian white pickled cheese. Fifteen percent of *Lactobacillus* and 2% of *Enterococcus* isolates showed fast acidifying activity. Aminopeptidase and autolytic properties were generally higher for *Lactobacillus* strains when compared to the enterococci. Among the lactobacilli, *Lactobacillus paracasei* subsp. *paracasei* was the highest in aminopeptidase activity and autolytic properties. Antagonistic activity was detected in 70% of *Lactobacillus* and 30% of *Enterococcus*

isolates. Two strains of *Lactobacillus paracasei* subsp. *paracasei* and one of *Lactobacillus plantarum* were capable of producing exopolysaccharides in milk.

Key Words: Rep-PCR, Egyptian white pickled cheese, lactic acid bacteria

523 Physiological and transcriptional response of *Lactobacillus casei* ATCC 334 to acid stress. R. Thompson*¹, V. Deibel^{2,3}, J. Steele², and J. Broadbent¹, ¹Utah State University, Logan, ²University of Wisconsin, Madison, ³TracMicro, Madison, WI.

Lactobacillus casei is used as a starter culture in fermented foods, as a probiotic, and in the industrial production of lactic acid. *Lb. casei* produces lactic acid as a major end product of carbohydrate fermentation, which acidifies the environment. Cell survival in acidic environments is critical to industrial application of *Lb. casei*, so a fundamental knowledge of cellular physiology during acid stress may reveal strategies to enhance its industrial performance. Here, we investigated the effect of acid adaptation of *Lb. casei* ATCC 334 on viability during acid chal-