Approximately 5% of the leucine oxidized in normally growing animals is through conversion of a-ketoisocaproate (KIC) to \( \beta \)-hydroxy-\( \beta \)-methylbutyrate. While this metabolic pathway is a minor part of leucine metabolism in the body, it may play a major role in the metabolic regulation attributed to leucine. HMB has been shown to improve growth and/or health in other animal species. Therefore, an experiment was conducted to determine the effect HMB might have on growing lambs. One-hundred-sixty-two lambs were housed 9 per pen and blocked by sex and weight. Treatments were applied as a top dress to the ground corn medium was used, consisting of (15% blood meal, 8% corn gluten meal, 22% cottonseed meal, 10% CP medium with corn starch medium resulted in more clostridium perfringens type C and D and randomly placed by weight group and ear tagged, dewormed, immunized against BVD, IBR, PI and clostridium perfringens type C and D and randomly placed by weight group and breeding on their respective treatment. A steam-flaked grain sorghum and cottonseed hull based diet was fed. No interactions existed between protein source and level of sorbitol supplementation on performance of incoming feedlot steers. D.W. Boyles, C.R. Richardson and L.M. Schake*. Texas Tech University, Lubbock TX and Holladay and Holliday, Lamesa, TX.

Laboratory studies and a lamb metabolism experiment were used to compare two slow ammonia release compounds to feed grade urea and cottonseed meal (CSM). The two compounds (A and B) contained 23% N and 7% Ca, and 10% N and 11% Ca, respectively. Corn starch (CS) and ground corn (GC) were used as in vitro substrates with nitrogen sources added to achieve 10 and 14% CP fertilization mediums. Samples taken after in vitro digestion at 2, 4, 6, and 8 h were analyzed for ammonia concentration by a Beckman DU-50 Spectrophotometer. No differences (P > 0.05) in ammonia release were found when the 10Y0 ground corn or 10% CP medium with corn starch were used as substrates with nitrogen sources added. Protein sources were chosen to meet the rumen protected amino acid levels of the pre-partum diet. Supplementation with RPAA appeared to ameliorate metabolic problems. Milk and milk protein yields were greater (P < 0.05) for HP-LP compared to Control cows after 10 wk (35.9 and 1.09 vs 31.0 and 0.96 kg/d) and after 20 wk (33.6 and 1.01 vs 26.3 and 0.80 kg/d). Similarly, cows receiving the LP-RP diet produced more milk and milk protein than Control cows after 10 wk (34.3 and 1.07 vs 31.0 and 0.94 kg/d) and after 20 wk (30.8 and 0.94 vs 26.3 and 0.80 kg/d). After 20 wk DMI was similar for HP-RP, LP-RP and Control (22.0, 22.4 and 21.7 kg/d). RPAA had a positive effect on the health and production of early lactation cows.

Key Words: lysine, methionine, rumen protected amino acids, cows.