(SE = 0.35) for CC, LC, LH, HC, and HH, respectively). In summary, kids on the L diet in Period 1 mobilized fat to accrete a small amount of protein. Continuous consumption of C resulted in high fat accretion relative to H in both periods. Consumption of H in Period 1 followed by C in Period 2 resulted in growth characteristics slightly different from those with continual intake of C, with a lower concentration of protein in accreted tissue for HC. The diet in Period 2 for kids previously consuming L did not markedly affect tissue accretion. In conclusion, the nature of the diet consumed by young Spanish goats can impact current and subsequent rate and composition of BW gain.

Key Words: Goats, Diet quality, Growth

W124 Effects of diet quality and age of meat goat wethers on early subsequent growth while grazing wheat forage. A. L. Goetsch*, G. Detweiler, T. Sahlu, R. Puchala, R. C. Mekel, and S. A. Soto-Navarro, *E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, OK.*

Thirty-six meat goat wethers (3/4 Spanish and 1/4 Boer), born in the previous Spring (initial age and BW of 8.5 mo and 17 ± 0.6 kg) or Fall (initial age of 2.5 mo and 13 ± 0.8 kg), were used to determine effects of ad libitum consumption of different quality diets and age on early subsequent growth while grazing wheat forage. The experiment was 14 wk long, with 9 wk in the winter consuming prairie hay (5% CP and 71% NDF) supplemented with 0.125% BW of soybean meal (PH), alfalfa pellets (AP), or a 70% concentrate diet (CD), and 5 wk in the spring grazing wheat forage. Average daily gain in Period 1 (28, 54, and 81 g; SE = 14.0) and Period 2 (123, 137, and 100 g for PH, AP, and CD, respectively; SE = 13.8) was similar among dietary treatments and greater for Spring vs. Fall wethers (Period 1: 72 vs 37 g, $P < 0.05$; Period 2: 131 vs 108 g, $P < 0.09$). There was not a discernible pattern of change in ADG as week of grazing wheat forage advanced (wk 1: 65 and 22 g; wk 2: 236 and 188 g; wk 3: 65 and 105 g; wk 4: 49 and 23 g; wk 5: 249 and 215 g for Spring and Fall, respectively). Body composition (estimated from shrunk BW and urea space) on d 42 and 98 and composition of gain were similar among dietary treatments. Differences between ages ($P < 0.05$) in protein mass on d 42 (2.92 and 2.65 kg for Spring and Fall, respectively) and 98 (3.72 and 3.36 kg for Spring and Fall, respectively) were similar in magnitude, although that in fat mass on d 98 (4.60 and 3.31 kg) was considerably greater than on d 42 (2.39 and 1.96 kg for Spring and Fall, respectively). In accordance, protein accretion from d 42 to 98 was similar between ages (14.3 and 12.6 g/d for Spring and Fall, respectively; SE = 0.86), whereas rate of fat accretion was greater ($P < 0.05$) for Spring vs Fall wethers (39.6 vs 24.1 g/d). In conclusion, the nature of the diet consumed ad libitum did not impact subsequent growth by 3/4 Spanish wethers, regardless of age, when grazing wheat forage.

Key Words: Goats, Age, Wheat forage

W125 Spatial-temporal relationships of grazing goats and sheep and their guardian dog monitored by global positioning system collars. T.A. Gipson*, M. Villaquiran, J. Joseph, and A. L. Goetsch, *E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, OK.*

Guardian animals such as dogs, donkeys, and llamas are commonly used to protect small ruminants from predators. However, data on their spatial relationships are lacking. The objectives of this research were to examine spatial relationships of goats (G), sheep (S), and guard dogs (D) over time and to determine circadian rhythms. In a group of 12 G and 12 S confined in a 1.6 ha pasture, Global Positioning System (GPS) collars were fitted to three G, two S, and the sole D. GPS fixed longitude and latitude every 30 min for 2 wk. After post-differential correction, minimum distance traveled between consecutive fixes (4,097 observations) and distance between any two animals at the same fix time (7,097 observations) were calculated using spherical geometry. The repeated measures, mixed model included animal identity, species, and fix time, with identity nested within species as a random effect. At night, S traveled least between fixes (17.2 ± 1.30 m) and D most (21.9 ± 1.94 m) with G intermediate (17.6 ± 1.10 m). However, during day, D traveled least (29.0 ± 1.64 m) and G most (48.3 ± 0.87 m) with S intermediate (41.0 ± 1.02 m). For distances among species at the same fix, closest distance was at night among G (11.2 ± 1.21 m) and greatest distance at night between the D and S (93.0 ± 1.45 m), which was not different ($P>.10$) from the distance during day between D and S (91.5 ± 1.21 m) or distance at night between G and S (90.2 ± 0.81 m). Distance among G was greater ($P<.05$) during day (14.8 ± 1.01 m) than at night (11.2 ± 1.21 m). Distance between S was greater ($P<.01$) during day (28.6 ± 1.40 m) than at night (14.1 ± 1.80 m). Distance between G and D during day was 52.6 ± 1.04 m and at night was 17.5 ± 1.21 m. During day distance between G and S was 66.9 ± 0.66 m. The three species exhibited definite spatial relationships and preferences; however, further study is needed to ascertain causal effects for these preferences.

Key Words: Goats, Sheep, GPS

W126 Global positioning system for monitoring spatial relationships of grazing goats within and across pastures. M. Villaquiran*, T. A. Gipson, J. Joseph, and A. L. Goetsch, *E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, OK.*

Herd dynamics for goats are not as well understood as for other grazing species, especially how differing genotypes affect spatial aspects or how herds in adjacent pastures interact spatially. The objective of this study was to investigate spatial relationships in a herd of mixed genotype goats. In one 2-ha pasture (East, E) containing 30 Angora (A) and Boer-cross (B) goats, global positioning system (GPS) collars were fitted to one A, two B, and their guard dog (D). In the adjacent 2-ha pasture (West, W) also containing 30 A and B, GPS were fitted to one A and one B. GPS fixed longitude and latitude every 30 min for 2 wk. D had access to both pastures. After post-differential correction, minimum distance traveled between consecutive fixes (3,922 observations) and distance between any two animals at the same fix time (4,265 observations) were calculated using spherical geometry. The repeated measures, mixed model included animal identity, genotype, pasture location, and fix time with identity nested within genotype as a random effect. During the day D (60.9 +/- 2.32 m) traveled more ($P < 0.01$) than goats (A: 36.4 +/- 1.58 m; B: 36.9 +/- 1.26 m, respectively). At night, A, B, and D traveled less ($P < 0.05$) during day (22.5 +/- 2.07, 18.3 +/- 1.67 and 21.7 +/- 2.85 m, respectively). Within pasture, A-B goat distance (19.9 +/- 3.91 m) was not different from the B-B distance (12.7 +/- 6.79 m). During day, distance among goats was 21.5 +/- 3.55 m and 16.6 +/- 3.54 m at night. Distances of D with goats in W were greatest ($P < 0.01$) during day (100.7 +/- 2.17 m) and least at night (75.1 +/- 2.08 m) and distances of D with goats in E were greatest ($P < 0.05$) during day (40.4 +/- 1.98 m) and least at night (35.2 +/- 1.82 m). Genotype of goat did not affect spatial relationships; however, time of day did, with distance traveled and distance between animals greater during day than at night.

Key Words: Goats, Dog, GPS

Physiology

W127 Metabolizable protein requirements for maintenance, gain, and mohair fiber growth by Angora goats. J. Luo*, A. L. Goetsch, and T. Sahlu, *E (Kika) de la Garza American Institute for Goat Research, Langston University, Langston, OK.*

A database of treatment mean observations from the literature was constructed for Angora goats to estimate metabolizable protein (MP) requirements for maintenance, gain, and mohair fiber growth. Observations were categorized as preweaning, growing, mature (not lactating or pregnant), lactating, and pregnant goats; however, due to limited numbers of observations, data for preweaning, lactating, and pregnant goats were removed. Intake of MP (MPI) was estimated from feed intake, diet composition, and protein degradability properties with methods similar to those of AFRC. Data set 1 (n = 124) was used to determine MP requirements for maintenance and whole body gain (i.e., ADG; tissue and fiber) by simple linear regression; data set 2 (n = 88) was employed to estimate MP requirements for maintenance, tissue gain, and mohair fiber growth by multiple regression. Variables, scaled by kg $BW^{0.75}$, were MPI (g/d), ADG (g), non-fiber, tissue gain (TG; g/d), and clean fleece growth rate (CFGR, g/d). Because there were no differences (P

> 0.05) between growing and mature goats in intercepts or regression coefficients of equations derived from data sets 1 or 2, observations were pooled. Data set 1 was then split into subsets for equation development (n = 73) and evaluation (n = 51). The initial equation for the regression with the development subset was MPI = 4.52 (SE = 0.349) + (0.336 (SE = 0.0568) × ADG) [n = 73; R^2 = 0.33]; the final equation after removing five observations with residuals greater than 1.5 times the residual SD was MPI = 4.30 (SE = 0.286) + (0.318 (SE = 0.0471) × ADG) [n = 68; R^2 = 0.41]. Regressing observed against predicted values with the evaluation subset resulted in an intercept and slope not different (P > 0.05) from 0 and 1, respectively. The equation with data set 2 was MPI = 3.63 (SE = 0.475) + (0.292 (SE = 0.0583) × TG) + 1.49 (SE = 0.430) × CFGR) [n = 88; R^2 = 0.41]. Similarly, after removing observations with residuals greater than 1.5 residual SD, the final equation was MPI = 3.35 (SE = 0.440) + (0.281 (SE = 0.0486) × TG) + (1.65 (SE = 0.394) × CFGR) [n = 83; R^2 = 0.46]. In conclusion, predicted MP_m for Angora goats was 4.30 and 3.35 g/kg $BW^{0.75}$ with 0 ADG and 0 TG and CFGR, respectively, and MP requirements for ADG, TG, and CFGR were 0.318, 0.281, and 1.65 g/g, respectively.

Key Words: Metabolizable protein, Angora goats, Mohair

W128 Adrenal and metabolic response to exogenous ACTH stimulation in pregnant and non-pregnant Angora and Spanish does.

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Angora goats are suspected of aborting under nutritional and(or) cold stress due to an impaired ability to mobilize body reserves to maintain blood glucose levels. We used non-pregnant (NP; n=6/breed) and pregnant (PREG; n=6/breed; 4 singles, 2 twins/breed) Angora (ANG) and Spanish (SPA) does in their third trimester. We tested metabolic response to a 26 h fast, followed by a 7 h ACTH infusion (0.015 IU/(kg BW.min)). Blood samples were collected at -60, -30, -1, and 30 min, and hourly from 1 to 7 h during infusion. After the 26 h fast (baseline values), plasma levels of cortisol and glucose were similar between ANG and SPA does and between number of fetuses. Concentration of NEFA was similar between breeds, but lower in PREG than NP does (x 10^2; 5.1 ± 0.3 vs. 6.1 ± 0.4 μM; P=0.03). Plasma urea N (PUN) level was higher in ANG than SPA does (13.6 ± 0.6 vs. 11.1 ± 0.6 mg/dL; P=0.03). To adrenal stimulation with exogenous ACTH, the integrated cortisol response above baseline was similar between breeds, but across breeds, was lower in PREG than NP does (x 10^3; 54.6 ± 3.6 vs. 71 ± 5.2 ng/(mL.min); P<0.01). Glucose peak response and time to peak were similar across breeds and fetuses. The integrated glucose response was similar between breeds, but lower in PREG than NP does (x 10^3; 4.4 ± 1.6 vs. 10.7 ± 1.7 mg/(dL.min); P=0.01). After the start of the ACTH infusion, NEFA decrease from baseline was shorter (32.6 ± 4.4 vs. 42.5 ± 4.5 min; P=0.02), and smaller (181 ± 36 vs. 195 ± 25 μM; P=0.03), in PREG than NP does respectively. Total increase in plasma NEFA after the minimum was similar in all groups. The integrated PUN response was similar between breeds, but higher in PREG than NP does (x 10^2; 14.8 ± 3.3 vs. 5.1 ± 1.3 mg/(dL.min); P=0.03). In conclusion, in response to a 26 h fast and to a 7 h administration of exogenous ACTH, ANG and SPA does mounted similar metabolic responses. Metabolic responses in both breeds were greatly altered by pregnancy.

Key Words: Stress, Gestation, ACTH

W129 Heat production by Alpine, Angora, Boer, and Spanish wether goats consuming different quality diets at a maintenance level of intake.

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Six Alpine (AL; 38.4 ± 3.0 kg), Angora (AN; 23.1 ± 2.7 kg), Boer (BO; 40.75 ± 4.5 kg), and Spanish (SP; 33.6 ± 2.16 kg) wethers (1.5 yr of age) were used to determine effects of genotype and diet quality on heat production (HP) when fed near maintenance and fasting. The experiment consisted of four simultaneous crossovers, with 21 d for adaptation before measures. Diets were 60% concentrate (CON; 14% CP and 12.04 MJ ME/kg DM) or ground alfalfa hay (HAY; 18% CP and 10.17 MJ ME/kg DM). Heat production was determined from O_2 consumption and production of CO_2 and CH_4 with a head-box respiration calorimetry system (Sable Systems, Las Vegas, NV), along with urinary N excretion, over 2-d periods in fed and fasting states (4-d fast). Heat production was expressed on the basis of average BW during HP measurement periods. There were no interactions between genotype and diet. Intake of ME was similar among genotypes and between diets. Neither diet (358 and 354 kJ/kg $BW^{0.75}$ for CON and HAY, respectively; SE = 5.7) nor genotype (359, 361, 346, and 358 kJ/ kg $BW^{0.75}$ by AL, AN, BO, and SP, respectively; SE = 8.8) influenced fed HP (P > 0.10). Fasting HP was similar between diets but was greatest among genotypes (P < 0.05) for AL (253, 227, 219, and 226 kJ/ kg $BW^{0.75}$ by AL, AN, BO, and SP, respectively; SE = 7.25), which may have been due to a greater level of activity exhibited by AL than other genotypes during fasting. Efficiency of utilization of ME for maintenance was similar (P > 0.10) between diets (0.68 and 0.67 for CON and HAY, respectively; SE = 0.01). The ME requirement for maintenance, estimated by regressing HP against ME intake, was similar (P > 0.10) between diets (341 and 346 kJ/kg $BW^{0.75}$ for CON and HAY, respectively; SE = 10.5) and among genotypes (352, 354, 321, and 346 kJ/kg $BW^{0.75}$ for AL, AN, BO, and SP, respectively; SE = 14.8). In summary, with a level of intake near maintenance, the energy need for maintenance appears similar for AL, AN, BO, and SP 1.5 yr-old wethers goats regardless of diet quality. Supported by USDA Project No. 0003835.

Key Words: Goats, Energy, Maintenance

W130 Effecs of genotype, diet, and feed intake on the relationship between energy expenditure and heart rate in goats.

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Heart rate (HR) holds promise as an indirect means of estimating energy expenditure (EE) by ruminants. Therefore, an experiment was conducted to determine effects of genotype, diet, and feed intake on the ratio of EE:heart rate in yearling wether goats. Six Alpine (41 ± 6.3 kg), Angora (23 ± 4.0 kg), 7/8 Boer (39 ± 4.4 kg), and Spanish (36 ± 1.3 kg) wethers (1.5 yr of age) were fed chopped alfalfa hay (18% CP and 10.2 MJ ME/kg DM) or a 60% concentrate diet (14% CP and 12.0 MJ ME/kg DM) at a level of intake near maintenance followed by a 4-d fast in a crossover design experiment. Energy expenditure was measured in a head box respiratory calorimetry system (Sable System, Las Vegas, NV) based on O_2 consumption and production of CO_2 and CH_4 with the Brouwer equation in 2-d periods while being fed and at the end of fasting. To monitor HR, stick-on ECG electrodes were attached to the chest just behind and slightly below the left elbow and at the base of the jugular groove on the right side of the neck. The human S610 HR monitor (Polar Electro, Woodbury, NY) was used to record HR at 1- min intervals. Heart rate per minute was affected by level of intake (60.7 and 38.9 for maintenance and fasting, respectively; SE = 0.9; $P < 0.05$) and a genotype × feed intake interaction (maintenance: 60.8, 63.6, 59.0, and 59.2; fasting: 42.1, 39.6, 38.3, and 35.6 for Alpine, Angora, Boer, and Spanish, respectively; SE = 1.7; $P < 0.05$). The ratio of daily EE (kJ/kg $BW^{0.75}$) to average HR per minute was not affected by genotype (6.01, 5.72, 5.87, and 6.24 for Alpine, Angora, Boer, and Spanish, respectively; SE = 0.22), diet (5.96 and 5.96 for hay and concentrate, respectively; SE = 0.13), level of intake (5.90 and 6.01 for maintenance or fasting, respectively; SE = 0.13), or their interactions. The absence of these effects on EE:HR suggest potential use of HR to estimate EE by goats. Supported by USDA project No. 0003835.

Key Words: Goats, Heart rate, Energy expenditure

W131 Interactions among body condition, protein supplementation, serum insulin levels and ovarian activity in goats.

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A reduction in either nutrient intake or body condition may compromise ovarian activity (OA). Previous results showed that protein supplementation and a high body condition increased OA without differences in serum LH and GH between treatments. This study evaluated the effect of by-pass protein supplementation level upon OA and serum insulin (INS) concentrations in Criollo x Alpine-Sannen goats, 19 months old, with divergent body condition (BC). Goats with low BC (LBC, n=16; BW=28.71.0 kg, BCS=2.010.2) or high BC (HBC, n=16; 38.461.0 kg, BCS= 3.080.2) received one of two levels of by-pass protein (PROT; blood meal): Non-PROT (NP, 0 g hd d-1) or PROT (HP, 125 g hd d-1)

during 40 d prior to ovulation. Goats had access to water, shade, mineral salts, and a basal diet of alfalfa hay (2.0% BW, 14.8% CP). Once synchronized (PGF2a, 2 injections 11 d apart), blood samples were collected 36 h later at 15-min intervals during a 6-h period to evaluate serum INS levels. On d 15 post-ovulation, OA was evaluated by transrectal ultrasonographic scanning. Overall means for total follicles (TF), corpus luteum (CL), and total ovarian activity (TOA; TF+CL) were 2.31, 2.34 and 4.65, respectively. While TF was not affected (P>0.05) by BC, both CL (P=0.03) and TOA (P=0.01) favored HBC-goats. Similarly, HP goats showed higher values for TF (P=0.04), CL (P=0.06) and TOA (P=0.01). While HBC-goats had greater serum INS than LBC goats (1.92 vs. 0.81 ng mL-1), HP-goats had greater INS values than NP goats (1.04 vs. 1.69 ng mL-1), and INS and CL were positively correlated (r=0.46; P<0.01). Results suggest that high serum INS levels may have prevented atresia and enhanced ovarian activity in both the high body condition and the protein supplemented goats.

Key Words: Goats, Insulin, Ovarian activity

Management

W132 Performance of lactating does fed different levels of ruminally undegradable intake protein.

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The objective of this study was to evaluate effects of supplemental ruminally undegradable intake protein (UIP; derived from mixtures of blood, fish, and soybean meals) on BW change, DM intake, serum insulin concentration and milk yield and composition in lactating Alpine does. Twenty-five does (BW 46.6 ± 5 kg, 10 ± 3 d of lactation) were stratified by age, day of lactation, and BW, and randomly assigned to supplements with different levels of UIP (UIP: 0, 25, 50, 75 100 g/d; CP: 0, 73, 101, 130, and 179 g/d). Does were individually fed (*ad libitum* intake) a basal diet (44.1% alfalfa hay, 18.5% corn stover, 20.7% flaked corn grain,7.8% ryegrass hay, 7.4% molasses, and 1.5% minerals; 12% CP, 2.42 Mcal ME/kg) for 58 d. Diets CP and UIP contents were 12.1, 13.0, 13.8, 14.8, and 15.6%; 3.7, 4.1, 4.8, 5.6, and 6.2% for 0, 25, 50, 75, and 100 g/d of UIP, respectively. Data were analyzed as a completely randomized design. No significant treatment differences were detected in BW ($P = 0.20$; 44.7 ± 1.05 kg) or DM intake ($P = 0.40$; 5.8 ± 0.17% BW). Milk yield increased quadratically ($P < 0.05$) as UIP increased in the diet (3.41, 4.01, 4.36, 4.34, and 4.17 kg/d for 0, 25, 50, 75, and 100 g/d of UIP, respectively; SE = 0.193). Milk concentrations of protein, lactose, fat, solids non-fat, and total solids, and serum insulin concentration were not affected by UIP level ($P > 0.05$). In summary, with a diet containing 12% CP and 70% forage, milk yield was greatest with 50 to 75 g/d of supplemental UIP. Addition of UIP in the diet of lactating does may result in greater milk production when fed to animals and diets similar to this trial.

Key Words: Goats, Milk, Undegradable intake protein

W133 Effect of recombinant bovine somatotropine (rBST) on milk production in goats of the North of Mexico.

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The ability of recombinant bovine somatotropin (rBST) to enhance milk production is well established in cows. However, there is a lack of information about the effect of rBST in goats. In order to evaluate the effect of rBST on milk production in dairy goats raised in northern Mexico (26°06' NL, 103°26' WL, 1092 masl), 56 does were used in two groups, balanced by days in milk and number of previous kiddings. One group (BST) was administrated 169 mg of recombinant bovine somatotropin at 14-d intervals, three consecutive times, whereas, the control group (CON) did not receive the rBST. Milk production was measured on the first experimental day and 7, 14 and 21 days after of the first rBST administration. Data was analyzed with the GLM procedure to evaluate the treatment effect on milk production and the interactions of production by days in milk, by number of previous kiddings, by measurement day and by goat. Treatment with rBST did not affect milk production (P>0.10), which was 1.51 L by the BST group and 1.58 L by the CON group. Nor was there an effect (P>0.10) of days after kidding or of measurement day on milk production. However, there was an effect of number of kiddings on production (P<0.001), with greater production in multiparous than in primiparous goats. Any of the studied interactions were not significant (P>0.10), which is congruent with the absence effect of treatment on milk productions. This finding suggests that goats don't respond to rBST in a similar fashion than cows, and that several factors that were not controlled in this experiment, for example, body condition and the individual feed consumption, might have an effect.

	Treatment			
	BST	Con	SE[1]	OSL[2]
Overall milk production	1.51	1.58	0.050	0.23
Milk production by days in milk				
40 to 55 d	1.50	1.56	0.056	0.48
56 to 83 d	1.53	1.59	0.056	
Milk production by previous kidding				
Primiparous	1.17	1.32	0.107	0.001[3]
Multiparous	1.86	1.83	0.095	

[1]SE, most conservative standard error is presented. [2]Observed significance level. [3]Significance between primiparous and multiparows goats

Key Words: Recombinant bovine somatotropine, Milk, Goats

W134 Growth performance by Alpine, Angora, Boer, and Spanish wether goats consuming 50 or 75% concentrate diets.

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Forty-six weaned wether goats (12 Alpine, 12 Angora, 10 Boer [87.5%], and 12 Spanish) were used to determine differences in growth performance with consumption of a 75% concentrate diet for 24 wk (75C) or for 12 wk subsequent to 12 wk of feeding a 50% concentrate diet (50C). Initial BW was 20.2, 12.2, 20.7, and 19.2 kg (SE = 0.73) for Alpine, Angora, Boer, and Spanish, respectively. There were no interactions between genotype and dietary treatment in DM intake, ADG, or gain efficiency in wk 1-12 or 13-24. Dry matter intake in wk 1-12 ranked (P < 0.05) Alpine and Boer > Spanish > Angora (703, 436, 689, and 567 g/d) and in wk 13-24 was greater (P < 0.05) for Alpine and Boer vs Angora and Spanish (712, 515, 702, and 456 g/d for Alpine, Angora, Boer, and Spanish, respectively). Dry matter intake as g/d was similar between dietary treatments. Average daily gain in wk 1-12 was greatest among genotypes (P < 0.05) for Boer (59, 59, 90, and 49 g); in wk 13-24 ADG was lowest among genotypes (P < 0.05) for Spanish and tended to be greater (P < 0.10) for Boer vs Alpine (58, 63, 82, and 25 g for Alpine, Angora, Boer, and Spanish, respectively). Gain efficiency (ADG:DM intake) was greater (P < 0.05) for Angora and Boer than for Alpine and Spanish in wk 1-12 (85, 132, 127, and 85 g/kg), and in wk 13-24 was lower (P < 0.05) for Spanish than for Angora and Boer (80, 121, 104, and 51 g/kg for Alpine, Angora, Boer, and Spanish, respectively). Average daily gain and gain efficiency were greater (P < 0.05) for 75 vs 50% dietary concentrate in wk 1-12 (ADG: 73 and 55 g; gain efficiency: 122 and 92 g/kg), and tended to be greater (P < 0.11) for 50C than for 75C in wk 13-24 (ADG: 49 and 65 g; gain efficiency: 77 and 101 g/kg for 75C and 50C, respectively). In conclusion, a moderate vs high dietary concentrate level did not impact differences among Alpine, Angora, Boer, and Spanish wether goats in growth performance.

Key Words: Goats, Growth performance, Dietary concentrate level

W135 Economical feedstuffs for on-farm meat goat diets.

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Eighteen intact male crossbred Boer meat goats were utilized to demonstrate the use of barley (an inexpensive, alternative local grain) as the primary feedstuff in an economical on-farm meat goat diet. At approximately 161.0 ± 1.3 days of age and 28.4 ± 0.5 kg body weight, goats were placed into two groups for a 14-day adjustment period and fed 17%