Abstract citation ID: skae019.032

83 Effects of cottonseed meal supplementation on growth performance of heifers grazing mature summer forage. Connor R. Kern[1], Whitney L. Crossland[1], Aaron B. Norris[1], Ryan R. Rathmann[1], Jhones O. Sarturi[1], [1]*Texas Tech University*

Abstract: As perennial warm-season grasses mature in late summer, dry matter intake (DMI) of growing heifers may be limited due to low protein (7.2 ± 2.5 %) and increased NDF content (67.5 ± 2.7%), which may compromise growth potential. Cottonseed meal (CSM) supplementation may improve forage digestibility by increasing rumen degradable protein offered, but research regarding the specific effects of CSM supplementation on gain performance and composition of gain in heifers is limited. It was hypothesized that supplementation of CSM to heifers grazing mature forage would have greater growth performance compared with heifers not receiving CSM. Objectives for this experiment were to compare the effects of two CSM supplementation strategies on the growth performance of heifers grazing mature summer forage. In two consecutive summers, commercial Angus cross heifers (n = 63) weighing 266.08 ± 32.74 kg were blocked by BW (light, medium, and heavy) and allocated to 9 paddocks (1.64 ha) of WW-B. Dahl Bluestem (Bothriochloa bladhii) for 67 to 70 d. This was a RCBD with a factorial arrangement of 3 treatments by 3 BW blocks, with paddock and year as random effects. Heifers received one of three supplementation strategies: no cottonseed meal (CON), 454 g/animal of CSM daily (CSM1), or 908 g/animal of CSM every other day (CSM2). Initial and final shrunk BW were measured; ADG and percent of BW gained were calculated. Ultrasound of initial and final longissimus muscle area (LMA), backfat (BF), and intramuscular fat (IMF) were measured; percent gained was calculated, respectively. There were no treatment by block interactions for any measured variable. Heifers receiving CSM1 and CSM2 had greater final BW than heifers receiving CON (317 and 320.8 vs 302.6 kg, respectively; (P = 0.01). Likewise, percent of BW gained was greater (P = 0.02) for CSM1 and CSM2 supplemented heifers compared with CON heifers (19.4 and 20.2 vs 14.6%, respectively). The ADG of CSM1 and CSM2 supplemented heifers was greater (P = 0.01) than CON (0.74 and 0.78 vs 0.54 kg/d, respectively). Treatment did not affect the percent of BF (P = 0.24) or IMF gained (P = 0.39). Heifers receiving CSM1 and CSM2 tended to gain proportionally more LMA than heifers receiving CON (13.58 and 13.77 % vs 7.24%, respectively; P = 0.07). As anticipated, BW

block affected final BW ($P < 0.001$) and percent BW gained ($P = 0.02$), as well as percent LMA gained ($P = 0.02$). In conclusion, CSM supplementation significantly affected growth performance of heifers grazing late summer WW-B. Dahl Bluestem forage versus no supplementation. In addition, there was no difference in growth performance between heifers receiving 454 g/d of CSM supplementation or 908 g/animal every other day, indicating flexibility for feeding strategy.

Keywords: cottonseed meal, heifer development, summer forage