experienced 86% less total morbidity than NP calves ($P < 0.01$), and consumed 7% more feed during d 0-28 ($P = 0.02$). Castration method and antibiotic administration protocol had no effect ($P > 0.24$) on cost of gain or calculated breakeven. However, cost of gains and breakevens were lower ($P < 0.02$) in steers than in bulls. Our results would indicate that further research is needed to determine the effects of castration method on health and feedlot performance; however our data would indicate that for improved performance and health, administering metaphylaxis to bulls upon arrival should be a consideration Furthermore, for bulls to compensate for increased cost of gains due to increased morbidity and decreased feedlot performance a discount of 6.3% should be applied when purchasing bulls vs. steers of a similar weight and type.

Whole corn substitution in steam-flaked corn-based diets with different concentrations of wet distillers grains plus soluble *M. R. McDaniel[1], D. A. Walker[1], K. M. Taylor[1], N. A. Elam[2], N. A. Cole[3], C. A. Loest[1]; New Mexico State University, Las Cruces[1], Nutrition Services Associates, Hereford, TX[2], USDA-ARS Conservation and Production Research Laboratory Renewable Energy and Manure Management Research Unit, Bushland, TX[3]*
Substituting steam-flaked corn (**SFC**) with whole shelled corn (**WSC**) in finishing diets containing wet distiller's grains with solubles (**WDGS**) could reduce grain processing costs without affecting feedlot cattle performance, feed conversion, and carcass characteristics. This study used 642 Angus-cross heifers (412 ± 18 kg initial BW) assigned to 36 pens in a randomized complete block design (3 blocks based on initial BW). Treatments (2 × 3 factorial) were 6 finishing diets based on SFC with 0 or 20% WSC replacing SFC, and 0, 15, or 30% WDGS replacing SFC (DM basis). Diets were formulated to contain equal concentrations of RDP and fat, and were fed to heifers for 108 d. No WSC × WDGS interactions ($P \geq 0.08$) occurred for DMI, ADG, G:F, and carcass characteristics. Heifers fed diets containing 20 vs 0% WSC had greater ($P < 0.01$) DMI, but final BW, ADG, and G:F were not affected ($P \geq 0.11$). The percentage of carcasses grading USDA Choice or better tended to be lower ($P = 0.07$), and the percentage grading USDA Select were higher ($P = 0.03$) for cattle fed diets with 20 vs 0% WSC. Other carcass characteristics were not affected ($P \geq 0.20$) by WSC. Increasing WDGS in SFC diets decreased final BW (linear, $P < 0.01$), tended to decrease ADG (linear, $P = 0.10$), tended to increase DMI (linear, $P = 0.08$), and decreased G:F (linear, $P = 0.01$). Addition of WDGS to SFC diets tended to decrease HCW (linear, $P = 0.09$), but other carcass characteristics were not affected ($P \geq 0.18$). In summary, substituting SFC with 20% WSC in finishing diets did not affect animal performance and feed conversion, but decreased carcass quality. In contrast, substituting SFC in finishing diets with increasing amounts of WDGS decreased animal performance and feed conversion, but did not affect carcass characteristics. Limited responses to the substitution of 20% WSC could in part explain the lack of WSC × WDGS interactions. Thus, it is not clear if grain processing could be reduced in finishing diets containing WDGS without affecting feedlot cattle performance and feed conversion.

Use of residual feed intake (RFI) to improve feed efficiency in beef cattle *N.O. Minton*, R. L. Kallenbach, R.L. Weaber, and M.S. Kerley, Division of Animal Sciences, University of Missouri, Columbia*
The objectives of this experiment were to 1) evaluate the effect on F1 progeny feed efficiency from divergent matings of sires and dams of known residual feed intake (RFI) phenotype and 2) determine the agreement in RFI measured on dams as virgin heifers (RFI_{hfr}) to RFI measured as mature cows (RFI_{cow}). We hypothesized parent RFI would influence F1 progeny RFI. We

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