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Manipulating grain processing method and roughage level to improve feed efficiency in feedlot cattle

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Abstarc :

The effects of feeding finishing diets containing whole corn with no roughage on performance and carcass characteristics of feedlot steers were evaluated in 6 trials conducted at commercial research facilities (Bos Technica Research Services Inc., Salina, KS) in the Southern Plains of the United States. One hundred and two feedlot pens containing 6,895 steers were represented. All trials were designed as randomized complete blocks with pen serving as the experimental unit. Steers were fed and managed similarly across all trials. Treatments consisted of a typical control finishing diet with various grain sources and processing methods that contained roughage and a finishing diet containing whole corn (8 to 23% of diet DM) but without added roughage. Final BW was greater ($P < 0.1$) for steers fed typical finishing diets than for steers fed whole corn diets without roughage in 5 of the 6 trials. Feeding finishing diets containing whole corn but without roughage resulted in decreased ($P < 0.1$) ADG and carcass ADG in 5 of the 6 trials. However, DMI also was less ($P < 0.1$) for steers fed whole corn finishing diets without roughage in all trials such that feeding whole corn diets without roughage improved ($P < 0.05$) G:F (BW basis) in 2 of the 6 trials, and improved ($P < 0.1$) G:F based on carcass weight in 5 of the 6 trials. Dry matter intake as a percentage of BW daily across trials was well predicted from percentage of dietary NDF from roughage, being 1.906 + 0.0199 (±0.0012) NDF ($P < 0.05$). Performance-based NEg content of the diet was greater ($P < 0.07$) for steers fed whole corn diets without roughage. Differences in USDA yield and quality grades were inconsistent. Results indicate that feeding diets containing whole corn with no added roughage tends to decrease DMI and ADG in finishing steers, but improves feed efficiency and performance-calculated dietary NEg.

Key Word :
finishing cattle, roughage, whole corn

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