option for beef heifers

on a dry matter basis (National Research Council, 2000).

Total crude protein concentrations of heifers supplemented with corn, WBG and the mix supplements were 10%, 20% and 14% of diet dry matter, respectively. Thus, heifers supplemented with WBG and the mix consumed crude protein amounts that either met or exceeded their requirements.

Results from preconditioning in energy wastage and reduced microbial efficiency. Despite the energy wastage induced by excessive protein intake and the less hay dry matter intake of heifers supplemented with WBG, heifers provided with WBG and mix supplements had similar ADG and were 40% more feed efficient than heifers supplemented with corn (Table 2).

This can be attributed to the greater metabolizable protein supplied provided by adding WBG to supplements. Similarly, adding WBG at 34% or 62% of diet dry matter corrected the metabolizable protein deficiency and increased the feed efficiency of growing beef heifers by 45% compared to feeding a corn silage-based diet without WBG (Crickenberger and Johnson, 1982). Also, the feed efficiency of feedlot heifers was similar when WBG was added at 15%, 30% or 45% of diet dry matter (Homm et al., 2008).

Mineral status

The concentrations of most minerals in WBG were greater than those observed for corn, except for potassium and cobalt (Table 1). Hence, it was expected that the mineral intake and status of beef heifers would be affected by replacing corn with WBG.

Indeed, heifers supplemented with WBG had greater intakes of calcium, magnesium, phosphorus, sulfur, copper, manganese, molybdenum, selenium and zinc and less intake of potassium (Table 3) compared to heifers supplemented with corn.

Despite the differences in mineral intake, liver concentrations of all minerals except molybdenum did not differ (P > 0.26) among treatments. A potential explanation can be the antagonistic effects of specific minerals reducing the absorption of other minerals. In the current study, heifers supplemented with WBG had greater intake of sulfur, zinc and molybdenum, which are minerals known to reduce liver copper and selenium accumulation.

The Bottom Line

WBG is an alternative feed ingredient for preconditioning beef heifers led medium-quality tall fescue hay. The greater protein concentrations of WBG corrected the metabolizable protein deficiency of preconditioning beef heifers and likely explained the increased growth performance and feed efficiency compared to heifers supplemented with finely ground corn.

Despite the greater mineral intake of heifers supplemented with WBG, the trace mineral status of preconditioning beef heifers was not affected after 35 days of supplementation.

References


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