



13. Dried Distillers Grains as a Source of Supplemental Energy and Protein for Developing Replacement Heifers

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Ethanol production is an important industry in Nebraska, in which distillers grains are co-produced during the fermentation process. Demand for distillers grains grows synchronously with increased production of ethanol. The goal of this research is to evaluate the value of distillers grains as a source of supplemental energy and protein in replacement heifer development diets, potentially enhancing the profitability of ethanol production from corn. Distillers grains have approximately 120% the energy of corn in forage diets and contain relatively high levels of crude protein, making them an economically feasible energy source in replacement heifer diets. Some Nebraska producers are feeding distillers grains to replacement heifers, but have concerns regarding the lack of research related to possible effects of feeding dried distillers grains in developing heifer diets. Therefore, this research is needed to address producer-driven concerns and is both warranted and necessary for adoption of distillers grains as a major component of heifer development rations. Completion of this research is necessary to determine if distillers grains affects any specific reproductive responses such as age at puberty, synchronization rate, AI conception rate, or pregnancy rate, and to justify the use of distillers grains as the primary source of energy and protein for replacement heifer development. Nebraska producers maintain an inventory of approximately 2 million beef cows. At a modest 15% replacement rate, this represents almost 300,000 replacement heifers developed annually, which could equate to an additional demand of 210,000 tons of distillers grains.

The goal of this research project is to evaluate the value of distillers grains as a source of supplemental energy and protein in replacement heifer development diets, potentially enhancing the profitability of ethanol production from corn. Objectives in reaching this goal are as follows: (1) Determine whether supplementation of prepubertal heifers with excess undegradable intake protein (UIP) from distillers grains affects age or weight at puberty; (2) Evaluate the response to estrous synchronization, artificial insemination conception rate, and pregnancy rate of heifers fed distillers grains during development; and (3) Communicate the value of distillers grains in heifer development systems to beef producers in Nebraska.