

## Utilization of Field Pea and Sunflower Meal as Dietary Supplements for Beef Cows

W.W. Poland<sup>1</sup>, L.J. Tisor<sup>1</sup>, C. Smith<sup>2</sup>, T. Transtrom<sup>2</sup> and A.S. Bartlett<sup>2</sup>

<sup>1</sup> Dickinson RE Center, North Dakota State University

<sup>2</sup> Department of Agriculture and Technical Studies, Dickinson State University

**ABSTRACT:** The objectives of this study were to determine if field pea and sunflower meal can be used effectively as dietary supplements and whether energy or protein is a first-limiting nutrient for beef cows grazing stockpiled native forage in the late fall and early winter. Beef cows grazed a pasture of stockpiled predominately native range in western North Dakota from November through January in each of two years. At the end of the grazing portion of the experiment each year, all cows were combined into one group and managed similarly. Grazing treatments included a control (CON) and three supplemented groups. Supplemental treatments were chosen to supply additional energy and gradient levels of protein. Supplemental treatments were a barley-, field pea- and sunflower meal-based pellet. Dietary treatment did not affect BW change on day 14 of grazing ( $P>.7$ ). Supplementation improved BW change compared to CON on days 42 ( $P\leq.1$ ) and 70 ( $P\leq.05$ ) in both years and on day 84 ( $P\leq.01$ ) in year 2. Overall, supplementation improved weight change during grazing by 29.6 and 27.2 kg in years 1 and 2, respectively. Body condition score (BCS) change was improved by supplementation on day 42 in year 1 ( $P=.08$ ) and on day 84 in year 2 ( $P=.02$ ). Under common management for 28 days post-grazing, overall BW change ( $P>.5$ ) did not differ among treatments in year 1. However, in year 2 after 42 days post-grazing, supplemented cows were still 25 kg heavier than CON cows. Overall change in BCS with common post-grazing management ( $P=.8$  and  $.18$  in years 1 and 2, respectively) was not affected by dietary treatment. Supplemental treatment did not affect BW ( $P>.19$ ) or BCS ( $P>.13$ ) change in either year. Weight change in beef cows grazing stockpiled native forage from mid November to late January was improved by supplementation. Energy appeared to be a first limiting nutrient and source of supplemental energy (barley, field pea or sunflower meal) did not affect BW change.

Key Words: Stockpiled Native Forage, Supplementation, Winter Range

*The full paper was published in the Western Section, American Society of Animal Science Proceedings Vol. 56, 2005.*