Public Abstract
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M.S.
Animal Science
Effect of Dry Matter Intake Restriction on Energy Balance, Ruminal fermentation, and Nutrient Retention by Beef Steers
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Graduation Term: Fall 2005

Two studies were conducted to determine the effects of DMI restriction on digestion and metabolism by feedlot steers. In Trial 1, 12 steers were assigned randomly to one of three diets that were formulated to promote a 1.6 kg average daily gain (ADG) at intake levels corresponding approximately to 100, 90, or 80% of ad libitum dry matter intake (DMI). In Trial 2, 12 steers fitted with ruminal cannulae were randomly assigned to one of two diets that were formulated to promote a 1.6 kg ADG at either 100 or 80% of ad libitum DMI. All diets delivered similar total net energy, metabolizable protein, Ca, and P per day. Steers limited to 80% of ad libitum DMI had reduced fecal output and greater diet digestibility compared with steers fed ad libitum. Urinary output appeared to be greater by cattle restricted to 80% of ad libitum DMI; however, this condition did not affect retention of dietary phosphorus. Fecal energy loss was lesser and urinary energy loss greater by cattle limited to 80% of ad libitum DMI compared with cattle fed ad libitum. There were also changes in the proportions of ruminal fermentation end products between treatments. In spite these changes, ME intake was similar among cattle fed 80, 90, or 100% of ad libitum DMI.