Effects of Field Peas Inclusion on Intake and digestion in Beef Steers Fed Medium Concentrate Diets
ASAS Abstract

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Four ruminally and duodenally cannulated steers (703.4 ± 41 kg initial BW) were used in a 4 x 4 Latin square to evaluate effects of field peas inclusion on intake and site of digestion in beef steers fed 55% concentrate diets. Steers were fed ad libitum at 0700 and 1900 daily and were allowed free access to water. Diets consisted of 45 % grass hay (6.8% CP) and 55% concentrate mixture. Treatments consisted of: 1) control, no peas; 2) 15% peas; 3) 30% peas; and 4) 45% peas in the total diet, with peas replacing wheat middlings, soybean hulls, and barley malt sprouts in the concentrate mixture. Experimental period consisted of a 9-d diet adjustment period followed by a 5-d collection period. During collections, fecal output was measured using fecal bags, and duodenal samples were taken twice daily from all steers as follow: d 2, 0630 and 1230; d 3, 0800 and 1400; d 4, 0930 and 1530; and d 5, 1100 and 1700. Total DMI (15.0, 13.7, 14.0, 13.2 ± 0.5 kg/d) and OMI (13.5, 12.3, 12.6, 11.9 ± 0.4 kg/d) decreased ({P} = 0.05) linearly with pea inclusion. Apparent ruminal CP digestibility (54.0, 49.0, 38.0, 45.0 ± 3.1%) decreased ({P} # 0.03) linearly with increasing field peas. Neutral detergent fiber intake (8.9, 7.9, 7.8, 7.0 ± 0.3 kg/d) and fecal NDF output (3.1, 2.9, 2.6, 2.3 ± 0.2 kg/d) decreased linearly ({P} #0.03) with increasing field peas. No effects were observed ({P} $ 0.05) for microbial efficiency or total tract digestibility of OM, CP, NDF and ADF. Inclusion of up to 45% field peas to beef steers consuming medium concentrate diets reduces apparent ruminal and true ruminal CP digestibility, tends to reduce DMI but does not alter OM, NDF, or ADF digestibility.

Field Pea, Digestibility, Cattle