

fed 0.10% P also consumed 70.1% less ($P < 0.01$) total P each day and excreted 51.9% less P in the feces ($P < 0.01$) and 94.6% less P in the urine ($P < 0.01$) compared with steers fed 0.30% P. Water-soluble P in the feces was greater ($P < 0.01$) on a g/d basis in steers fed 0.30% P when compared with steers fed 0.10% P. However, the proportion of total fecal P excreted as water-soluble P increased by 23.0% in cattle fed 0.10% P compared with steers fed 0.30% P, regardless of phytase inclusion level. There was no effect of dietary phytase concentration on blood or urinary ($P \geq 0.27$) P concentrations. Blood P concentration was positively correlated ($r = 0.60$; $P < 0.01$) with urinary P concentration when steers were fed 0.10% P; however, when steers were fed 0.30% P, there was no correlation ($r = 0.36$; $P = 0.16$). Regardless of dietary P concentration, phytase supplementation did not increase P absorption or retention.

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111 Effects of exogenous phytase supplementation and dietary phosphorus concentration on metabolism and digestibility of beef cattle.

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Objectives were to determine the interactions of phytase inclusion and dietary phosphorus concentration on metabolism of beef cattle fed a starch-based diet. Six ruminally fistulated steers (initial BW = 750 ± 61 kg) were allotted to a 6 × 6 Latin square design with a 3 × 2 factorial arrangement of treatments. Factors included phytase inclusion, at 0, 500, or 2000 phytase units (FTU)/kg of diet DM, and dietary P concentration, at 0.10% and 0.30% of total diet DM. Data were analyzed using the MIXED procedure of SAS with animal as the experimental unit. The CORR procedure was used to compare P concentrations between samples. There were no treatment interactions ($P \geq 0.30$) for any parameter measured. There were no main effects ($P \geq 0.45$) of phytase on DMI, total fecal output, apparent DM digestibility, water intake, or urinary output. Steers fed 0.10% P had decreased ($P < 0.01$) DMI and total fecal output but increased ($P < 0.01$) apparent DM digestibility compared with steers fed 0.30% P. Although N intake and retention were not affected by treatment, steers fed the 0.10% P diet tended ($P = 0.10$) to absorb more N and excrete more N in the urine ($P = 0.02$) and less N in the feces ($P < 0.01$) compared with steers fed 0.30% P. Steers