

The utilization of P in field peas by growing pigs

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An experiment was conducted to measure the apparent (ATTD) and true (TTTD) total tract digestibility of P in field peas containing 0 or 500 FYT of microbial phytase (Rhonozyme). Six pigs were placed in metabolism cages and allotted to three diets in a repeated 3 x 3 Latin square design. The three dietary treatments were field peas, field peas with phytase, and a P-free diet. The P-free diet was used to measure endogenous losses of P from the pigs which allowed for the calculation of TTTD. Total collections of urine and fecal material were performed during 5-d periods following a 7-d adaptation period to the diet. Results of this experiment showed that the ATTD and TTTD of P in field peas without microbial phytase (55 and 60.8%, respectively) were lower ($P < 0.01$) than in field peas with microbial phytase (70.0 and 75.6%, respectively). Likewise, P retention increased ($P < 0.001$) from 7.09 g to 9.78 g with the addition of microbial phytase to the diet. On a percentage basis, the retention of P increased ($P < 0.001$) from 54.9 to 69.9% with the addition of phytase to the diet. The endogenous loss of P was estimated at 207 mg per kg DMI. The ATTD for Ca in field peas was 72.8 and 76.6% in diets without and with field peas, respectively. The absorption of Ca was not influenced by phytase (10.3 and 10.9 g/five d without and with phytase, respectively). However, the retention increased ($P < 0.001$) from 8.81 to 10.36 g/five d with the addition of phytase to the diet. On a percentage basis, retention of Ca increased ($P < 0.001$) from 62.5 to 73.8% with the addition of phytase to the diet. The addition of microbial phytase to field peas also reduced ($P < 0.001$) the excretion of P in the feces (from 5.77 to 4.09 g/five d). It is concluded that the P in field peas has a relatively high digestibility and that this digestibility may be improved by the addition of phytase to the diet.