

Effect of phytase supplementation to high- and low-phytate diets on amino acid digestibility in growing pigs

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Supplementation of phytase usually improves the utilization of phosphorus (P) from ingredients of plant origin. Previous studies on the effect of phytase supplementation on amino acid (AA) utilization have shown inconsistent results. This study was carried out to determine the effect of phytase (Natuphos[®]) supplementation to diets high and low in phytate-P on the apparent ileal digestibilities (AID) of crude protein (CP) and AA in growing pigs.

Eight barrows (average initial BW 25.3 kg), fitted with a simple T-cannula at the distal ileum, were fed four diets according to a repeated 4×4 Latin square design. Diet 1: high in phytate-P (0.48%). Diet 2: low phytate-P (0.22%). Diet 3: diet 1 supplemented with phytase (1000 FTU/kg). Diet 4: diet 2 supplemented with phytase (1000 FTU/kg). The high phytate diets contained 20% rice bran, which is rich phytate-P. The digestibility studies and analytical and statistical procedures were carried out according to established procedures. As was expected, the AID of CP and AA were lower in the diets that contained 20% rice bran. Supplementation of phytase to the high- as well as to the low-phytate diet did not affect the AID of CP and AA. Consistent with previous studies there were small but non-significant increases ($P>0.10$) in the AID of CP and AA upon phytase supplementation.

Implications:

Supplementation of phytase to either a high- or low-phytate diet did not affect ($P>0.10$) the AID of CP and AA. These studies show that a response to phytase supplementation on the AID of CP and AA is independent of the dietary content of phytate-P.

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