Two experiments were conducted to determine the effects of a dietary non-starch polysaccharide enzyme (NSP; Easyzyme, ADM, Decatur, IL) and/or phytase (Phyzyme, Danisco Animal Nutrition, St. Louis, MO) addition in corn-soybean meal or high-fiber diets on nursery pig performance. In Exp. 1, 192 pigs (9.9 kg BW) were allotted to 1 of 6 diets containing 10% wheat midds, 0, 500, or 1,200 FTU/kg phytase. Available P was formulated to supply 2.6 times the estimated maintenance requirements. Each diet type (corn-soybean meal; CS, or corn-soybean meal plus 30% of 4 dietary treatments arranged in a 2×2 factorial. Main effects were observed in the diet supplemented with xylanase only for pigs. The phytase and xylanase supplementation improved ATTDs of P and NDF (62.58, and 68.32%, P=0.052) and hemicellulose (75.47, 66.31, and 69.76%, P=0.05) observed in the diet supplemented with xylanase among treatments (NXP) showed the highest ATTD of P among treatments (47.41, 43.87, 53.06, and 43.28%, P=0.01) and the increase ATTD of EE compared with NC and NX groups (76.74, 82.89, and 77.94%, P<0.01). In contrast between NC and NX groups, the single supplementation of xylanase (NX) increased ATTDs of ADF (60.86, 63.59%, P<0.01), neutral detergent fiber (NDF; 73.67, 65.18, and 68.32%, P<0.01), and hemicellulose (75.47, 63.84, 66.31, and 69.76%, P<0.01) were observed in PC group. The phytase and xylanase supplementation (NXP) showed the highest ATTD of P among treatments (47.41, 43.87, 53.06, and 43.28%, P=0.01), and the increase ATTD of EE compared with NC and NX groups (76.74, 82.89, and 77.94%, P<0.01). This experiment demonstrated that the phytase and xylanase supplementation improved ATTDs of P and EE whereas the improvements in ATTD of fibrous components were observed in the diet supplemented with xylanase only for pigs.

**Key Words:** phytase, xylanase, pigs, apparent total tract digestibility