

0476 Effect of a 6-phytase derived from *Buttiauxella* spp. expressed in *Trichoderma reesei* on apparent total tract digestibility of Ca and P, bone ash, and growth performance in weaning piglets.

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Two studies evaluated the effect of a 6-phytase derived from *Buttiauxella* spp. expressed in *Trichoderma reesei* (PHY) on apparent total tract digestibility (ATTD) of Ca and P, bone ash and growth performance in piglets. Five dietary treatments were tested, including a positive control (PC) based on corn-SBM-canola meal adequate in available P and Ca, a negative control (NC) with low available P and Ca and NC supplemented with PHY at 250, 500, and 1000 FTU/kg feed with low available P (-0.2%) and Ca (-0.17%). Experiment 1 used 232 male piglets (Initial BW = 9.62 ± 1.36 kg) with 10 replicates per treatment; 3 to 4 piglets/replicate. Experiment 2 used 160 piglets (Initial BW = 8.99 ± 0.16 kg) with 8 replicates/treatment; 4 piglets/replicate. Experimental diets were fed in mash form ad libitum in 2 phases for 6 wk in Exp. 1 and from 9 to 22 kg BW in Exp. 2. Fecal samples were collected from 1 pig/pen at the end of Exp. 1 and in the last 4 d of feeding in Exp. 2; samples were measured for ATTD using a TiO₂ marker. Femurs from both forelegs were collected for bone analysis. Linear and quadratic responses were determined using the Fit Model platform of JMP; trial was used as a random effect. In both experiments, NC reduced all growth and digestibility parameters compared with PC (Table 0476). PHY supplementation resulted in linear/quadratic improvement in BWG, G:F, digestible Ca and P, as well as bone ash. In conclusion, 1000 FTU/kg 6-phytase derived from *Buttiauxella* spp., expressed in *Trichoderma reesei*, can replace 0.2% available P in weaning piglet diets, based on BWG and bone ash data.

Key Words: phytase, swine, performance

Table 0476. Effect of phytase supplementation on growth parameters, Ca and P digestibility, and bone ash percentage¹

	PC	NC	Phytase dose, FTU			SEM	Linear	Quadratic
			250	500	1,000			
Body weight gain, g/d	566.8	377.1	466.2	484.3	536.3	11.84	< 0.0001	0.110
Feed intake, g/d	942.6	774.1	896.0	910.9	954.3	18.19	< 0.001	0.116
G:F	0.61	0.49	0.53	0.54	0.57	0.01	0.002	0.504
Phosphorous ATTD, %	28.52	6.08	23.04	43.32	47.89	1.09	0.023	0.372
Calcium ATTD, %	54.51	38.00	40.99	67.04	56.21	2.23	< 0.0001	< 0.001
Bone ash, %	46.45	36.82	41.06	42.45	43.67	2.15	< 0.0001	< 0.0001

¹Assessment of linear and quadratic responses excluded positive control treatments.