Table 121. Effect of phytase on apparent total tract digestibility (ATTD), and standardized total tract digestibility (STTD) of P in corn, soybean meal (SBM), and full fat rice bran.[1]

	Corn				SBM				Full fat rice bran			
	Phytase, FTU/kg				Phytase, FTU/kg				Phytase, FTU/kg			
Item	0	500	SEM	*P*-value	0	500	SEM	*P*-value	0	500	SEM	*P*-value
ATTD of P, %	47	66	4	0.005	38	68	8	0.018	47	62	4	0.012
Basal EPL, mg/d	136	147	10	0.478	149	134	4	0.030	159	159	9	0.994
STTD of P, %	53	73	4	0.004	46	73	8	0.035	50	64	4	0.015

[1]FTU, phytase units.

121 **Effect of microbial phytase on the standardized total tract digestibility and in vitro release of phosphorus in corn, soybean meal, and rice bran fed to growing pigs.** J. J. Abelilla[1,*], R. C. Sulabo[1], H. H. Stein[2], S. P. Acda[1], A. A. Angeles[1], M. C. R. Oliveros[1], F. E. Merca[3], *[1]Animal and Dairy Sciences Cluster, University of the Philippines, Los Baños, the Philippines, [2]University of Illinois, Urbana, [3]Institute of Chemistry, University of the Philippines, Los Baños, the Philippines.*

Two experiments were conducted to determine the effect of microbial phytase on the standardized total tract digestibility (% STTD) of P in corn, soybean meal, and full fat rice bran when fed to growing pigs, and to determine if in vitro P release measured using procedures adapted from Liu et al. (1997) may be used to predict STTD of P. Each raw material was used as the sole source of P in semipurified diets (without or with microbial phytase, 500 units/kg of Optiphos 2000, Enzyvia, Sheridan, IN) that also contained sucrose, vitamins and minerals except P. In Exp. 1, 36 barrows (PIC L337 × C24, initial BW = 22.3 ± 1.4 kg) were fed semipurified diets for 10 d, with a 5 d adaptation period and 5 d for collection of feces. Each pig was housed in metabolism cages that allowed for total collection of feces. Basal endogenous P loss (EPL) was assumed to be 200 mg/kg DMI. Addition of phytase increased ($P < 0.05$) the STTD of P in corn from 53.38 to 73.35%, in SBM from 46.12 to 73.05%, and in rice bran from 49.76 to 64.43%. In Exp. 2, 1.0 g of each diet was incubated with 3000 units of pepsin at pH 2.5 for 75 min. The pepsin digesta was then mixed with 2.4 mg of pancreatin and then incubated at pH 6.0 for 240 min. The in vitro release of P was highly correlated (r = 0.94) with the in vivo P digestibility. In conclusion, microbial phytase improved the STTD of P in corn, SBM, and full fat rice bran, and the in vitro procedure may be used to predict the STTD of P in corn, SBM, and full fat rice bran fed to growing pigs.

Key Words: phosphorus digestibility, pigs, rice bran