

228 Effect of fat sources on ATTD of minerals.

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An experiment was conducted to determine the effect of supplementing diets fed to growing pigs with fat sources that differ in their concentrations of fatty acids on the apparent total tract digestibility (ATTD) of Ca, P, Mg, Zn, Mn, Na, and K. A basal diet based on corn and potato protein isolate was formulated that contained 7% sucrose. Five additional diets that were similar to the previous diet except that sucrose was replaced by 7% tallow, choice white grease (CWG), palm oil (PO), corn oil (CO), or soybean oil (SBO) were formulated. Diets were formulated to contain 0.70% Ca and 0.33% standardized total tract digestible P. Sixty growing barrows (initial BW = 15.99 ± 1.48 kg) were allotted to a randomized complete block design with 6 dietary treatments and 10 replicate pigs per treatment. Experimental diets were provided for 12 d with the initial 5 d being the adaptation period. Total feces were collected for 5 d using the marker-to-marker approach. The ATTD of Ca was greater ($P < 0.05$) for pigs fed diets containing SBO, CO, PO, or tallow than for pigs fed the basal diet or the CWG-diet, but pigs fed the diet containing tallow were not different from pigs fed a diet containing CWG (Table 228). ATTD of P was greater ($P < 0.05$) for diets containing SO or tallow compared with the basal diet or the CWG diet. The ATTD of Mg, Zn, Mn, Na, and K were not different among treatments. In conclusion, supplementation of CWG to diets fed to pigs does not change the digestibility of minerals, but tallow, PO, CO, and SBO may increase the digestibility of Ca and P, but not of other minerals.

Key Words: minerals, fat, pigs

Table 228. Apparent total tract digestibility (ATTD) of minerals in diets containing different fat sources

Item	Ingredient						P Value
	Basal	Tallow	Choice white grease	Palm oil	Corn oil	Soybean oil	
Ca	50.69 ^c	65.13 ^{ab}	54.07 ^{bc}	66.07 ^a	71.20 ^a	71.24 ^a	0.001
P	52.06 ^c	62.00 ^{ab}	53.52 ^{bc}	61.06 ^{ab}	59.24 ^{abc}	62.98 ^a	0.001
Mg	25.62	24.73	23.53	26.94	30.91	35.37	0.163
Zn	13.51	15.87	11.74	13.68	17.00	14.40	0.958
Mn	14.70	21.62	15.98	21.43	22.49	20.54	0.417
K	76.68	74.26	72.60	77.37	73.89	79.17	0.114
Na	90.40	90.99	90.66	90.69	91.30	91.95	0.363
S	81.70 ^{ab}	83.75 ^{ab}	81.31 ^b	83.98 ^{ab}	84.03 ^{ab}	84.40 ^a	0.011