1985

SDSU Nutrient Recommendations for Swine - 1985

Swine Nutrition Group
South Dakota State University

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Department of Animal and Range Sciences

SWINE 85-1

Feed cost currently comprise about 60% of the total production cost for most swine producers. Thus, a good nutritional program is an essential part of any successful swine enterprise. The nutrient recommendations listed in tables 1 and 2 should produce optimal growth and reproductive performance when used along with a sound management program.

Recommendations for all of the nutrients needed by the pig will not be presented. Only nutrients having a direct impact on performance and (or) those that must be added to prevent a deficiency are listed. Nutrients not listed are usually available in feed ingredients or other parts of the pig's environment in sufficient amounts such that supplementation is not necessary. Over supplementation of most nutrients is not advised under typical circumstances as this practice is seldom beneficial nutritionally or cost effective.

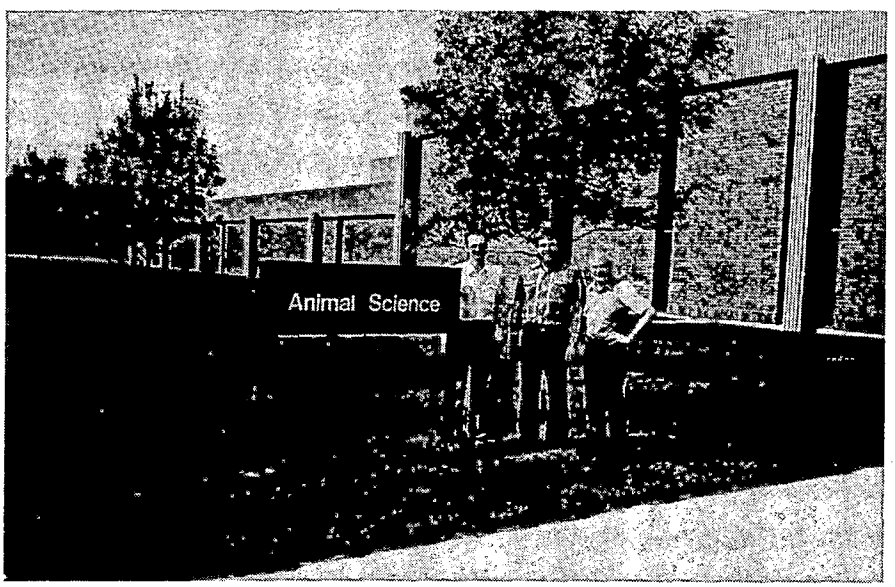

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Table 1. Recommendations for Macro-nutrients[a]

Nutrient	Growth or Production Stage[b]					
	Prestarter 10-20 lb	Starter 20-40 lb	Grower 40-120 lb	Finisher 120-220 lb	Sows and gilts[c] Gestation	Lactation
Energy[d,e]						
Digestible, Kcal/day	--	--	--	--	6,200	18,100
Metabolizable, Kcal/day	--	--	--	--	5,800	17,000
Protein, %[f]	20	18	16	14	12	14
Lysine, %	1.15	.95	.75	.60	.50	.65
Tryptophan, %	.18	.15	.13	.11	--	--
Threonine, %	.70	.65	.55	.45	--	--
Methionine, %[g]	.50	.45	.40	.30	--	--
Calcium, %	.80	.70	.65	.55	.90	.80
Phosphorus, %	.70	.60	.55	.55	.80	.70
Salt, %	.25	.25	.25	.25	.50	.50

[a] Recommendations revised January, 1985. Levels indicated should optimize performance under a good herd management program.

[b] Assumes ad libitum feeding (full-feed) for pigs weighing from 10 to 220 lb.

[c] Boars should receive 4 to 6 lb/day of a diet formulated to meet the lactation recommendation. More or less feed may be needed for individuals fed according to condition.

[d] Energy recommendation for growing pigs (20 to 220 lb) is not provided because pigs in this phase of production are fed ad libitum.

[e] Daily energy recommendations obtained when gestating and lactating sows receive 4 and 12 lb, respectively, of a corn-soybean meal diet. Additional feed may be needed when grains other than corn are used or for highly productive lactating sows. For best results, feed lactating sows individually according to body condition.

[f] Assumes ad libitum intake for growing pigs, 4 lb/day for gestating sows and 12 lb/day for lactating sows. Corn-soybean meal diets formulated to provide the recommended level of protein should also be adequate in amino acids. When grains other than corn are used, diets should be formulated to provide the recommended lysine level.

[g] May be methionine or methionine + cystine.

Table 2. Recommendations for Micro-nutrient Levels in One Ton of Complete Feed[a]

Nutrient	Growing swine[b] 10-40 lb	Growing swine[b] 40-220 lb	Mature breeding swine[c]
Trace minerals[d]			
Zinc, g	100	50	100
Iron, g	90	50	90
Copper, g	6	5	6
Manganese, g	20	20	20
Iodine, mg	140	140	140
Selenium, mg[e]	270	91	91
Vitamins[f]			
Vitamin A, IU	4,000,000	2,750,000	4,000,000
Vitamin D_3, IU	400,000	275,000	400,000
Vitamin E, IU	18,500	14,000	18,500
Vitamin K, g	3	2	3
Choline, g	90	--	500
Niacin, g	35	20	35
Pantothenic acid, g	20	15	20
Riboflavin, g	5	3	5
Vitamin B_{12}, mg	25	15	25
Biotin, mg	50	--	100

[a] Recommendation revised January, 1985. Indicated levels should be added to the diet as a supplement.

[b] Assumes ad libitum feeding.

[c] Assumes gestating and lactating sows are fed 4 and 12 lb per day, respectively.

[d] Mineral sources should provide the mineral in a form that is readily available to the pig. A number of known interrelationships exist between minerals. Excessive amounts of one mineral may produce a deficiency in another mineral, thus increasing its requirement.

[e] Selenium supplementation must comply with FDA regulations.

[f] Vitamin and mineral supplements should be stored separately when prolonged storage times are anticipated (more than 3 months).