

Table 2. CONTINUED. Nutrient Requirements of Breeding Swine: Percentage or Amount Per Pound of Diet

Nutrients	Bred Gilts and Sows; Young and Adult Boars		Lactating Gilts and Sows		Nutrients	Bred Gilts and Sows; Young and Adult Boars		Lactating Gilts and Sows	
	Requirements					Requirements			
VITAMINS					AMINO ACIDS (%)				
Beta-carotene (mg)	7.2		3.6		Arginine	—		.4	
Vitamin A (IU)	1,818		909		Histidine	.15		.25	
Vitamin D (IU)	140		90		Isoleucine	.37		.39	
Vitamin E (mg)	4.5		4.5		Leucine	.42		.70	
Vitamin K	.9		.9		Lysine	.43		.58	
Thiamine (mg)	.45		.45		Methionine + cystine	.23		.36	
Riboflavin (mg)	1.3		1.3		Phenylalanine + tyrosine	.52		.85	
Niacin (mg)	4.5		4.5		Threonine	.34		.43	
Pantothenic acid (mg)	5.4		5.4		Tryptophan	.09		.12	
Vitamin B ₁₂ (mcg)	6.8		6.8		Valine	.46		.55	

Table 3. Trace Mineral Requirements

Live Wt., lbs	Growing and Finishing					Bred Sows & Boars	Lactating Sows
	10-25	25-45	45-75	75-135	135-220		
MINERAL							
Magnesium, %	.04	.04	.04	.04	.04	.04	.04
Iron, mg	140	80	60	50	40	80	80
Zinc, mg	100	80	60	50	50	50	50
Manganese, mg	4	3	2	2	2	10	10
Copper, mg	6	5	4	3	3	5	5
Iodine, mg	.14	.14	.14	.14	.14	.14	.14
Selenium, mg	.15	.15	.15	.15	.10	.15	.15

Table 4. Partial Composition of Feeds Commonly Used in Swine Rations (as-fed-basis)

Feedstuff	Crude Protein %	Digestible Energy Kcal/lb.	Calcium %	Phosphorus %	Amino Acids		
					Lysine %	Methionine + Cystine (%)	Tryptophan %
Corn dent U.S. #2	8.8	1602	.02	.28	.24	.40	.05
Grain Sorghum	8.9	1563	.03	.28	.22	.30	.10
Wheat	10.2	1663	.05	.31	.31	.40	.12
Oats	11.4	1303	.06	.27	.40	.40	.16
Soybean Meal (44%)	44	1523	.29	.65	2.93	1.40	.62
Soybean Meal (50%)	48.5	1755	.27	.62	3.18	1.40	.67
Meat & Bone Meal	50.4	1303	10.10	4.96	2.60	1.00	.28
Fish Meal (me.)	60.5	1243	5.11	2.88	4.83	2.40	.68
Alfalfa Meal	17.5	1173	1.44	.22	.73	.40	.28
Dicalcium Phosphate	—	—	22	18.50	—	—	—
Limestone	—	—	38	—	—	—	—
Steamed Bone Meal	—	—	24	12.6	—	—	—

Table 5. Symptoms of Dietary Excesses of Certain Required Inorganic Elements

Element	Toxic Level	Age	Symptoms
Calcium	1% (with limited zinc or phosphorus)	Immature	Depressed appetite, reduced gain
Copper	135-225 mg/lb (in absence of higher levels of dietary iron and zinc) ^a	Immature	Reduced growth, lower hemoglobin, icterus, and death ^b
Iodine	365 mg/lb	Immature	Depressed feed intake and rate of gain, lowered hemoglobin and eye lesions
Iron	2275 mg/lb	Immature	Depressed feed intake and rate of gain, reduced serum inorganic phosphorus and femur ash, rickets
Manganese	1820 mg/lb	Immature	Depressed feed intake, reduced growth rate, stiffness and stilted gait
Selenium	2.3-3.6 mg/lb	Immature	Hoof separate from coronary bands, emaciation, loss of hair, cirrhosis and atrophy of liver
	4.5 mg/lb	Breeding (sows)	Reduced conception; pigs small, weak, or dead at birth
Sodium and chlorine (salt)	6-8% (if limited water is available)	All ages	Nervousness, staggering, weakness, paralysis, and death
Zinc	910 mg/lb	Immature	Reduced performance, arthritis, extensive hemorrhage and gastritis

^aIn a few instances, a dietary level of 115 mg/lb has resulted in symptoms of excess.

^bIn some instances, 225 mg/lb of copper has been fed without icterus or death occurring.

■ Issued in furtherance of Cooperative Extension Work Acts of May 8 and June 30, 1914 in cooperation with the United States Department of Agriculture. Leonard C. Douglas, Acting Director, Cooperative Extension Service, University of Missouri and Lincoln University, Columbia, Missouri 65211. ■ An equal opportunity institution.