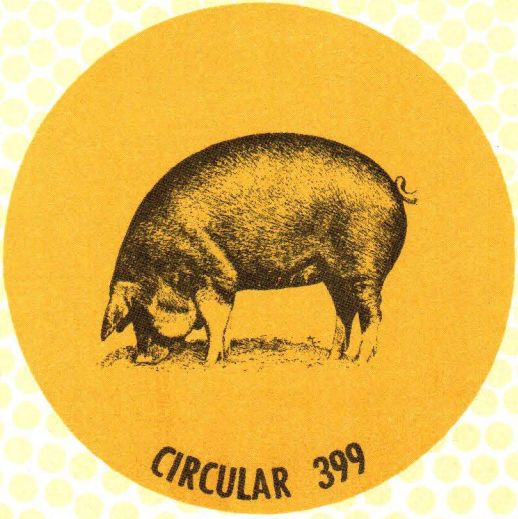
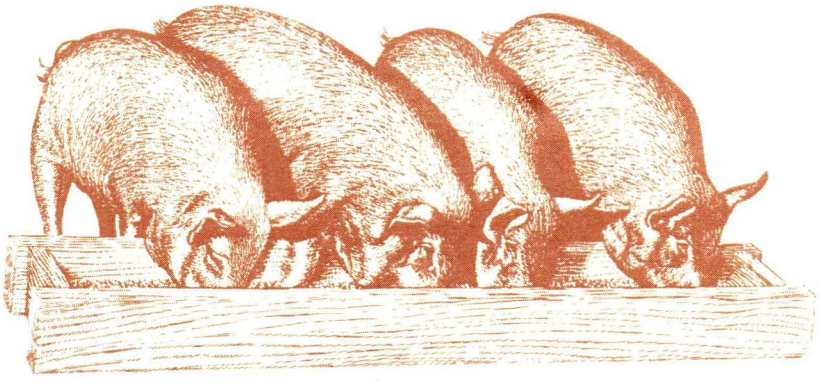
UNIVERSITY OF HAWAII COOPERATIVE EXTENSION SERVICE

EMERGENCY RATIONS FOR SWINE





EMERGENCY RATIONS FOR SWINE

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The importance of the pig as a meat producer in times of emergency is indicated by his ability to convert rapidly into pork such refuse as kitchen garbage, other waste material, and damaged products. Of further importance is his ability to convert a greater percentage of the gross energy in the feed eaten into human food than any other class of livestock except cows in their milk-producing capacity when both energy and protein are considered.

The type of emergency, such as a temporary emergency or an all-out international war, will determine the feeding program to be followed for swine. During a temporary emergency, the objective should be to maintain the herd until the feed supply becomes adequate. In an all-out international war, the objective should be to produce the greatest amount of meat from the least amount of feed. This system should not only be the most profitable for the producer but would provide more meat for human consumption.

Table 1. Nutrient requirements of swine

Liveweight	25 to 50 lbs.	50 to 125 lbs.	125 to market	Bred sows and gilts
Expected daily gain, lb.	.8 - 1.2	1.2 - 1.6	1.6 - 1.8	.6 - .8
Total feed, lb.	2.0 - 3.2	3.2 - 6.0	6.0 - 7.4	5.0
Crude protein, lb.	.34 - .48	.48 - .76	.76 - .90	.90
Crude protein, %	18	16	12	-
Calcium, %	.65	.65	.50	.60
Phosphorus, %	.60	.50	.40	.40
Salt %	.50	.50	.50	.50
Vitamins:				
A (I.U./lb.)[1]	600	400	400	1200
D (I.U./lb.)[1]	90	90	60	60
Riboflavin, mg.[2]	1.4	1.2	1.0	1.5
P. A. mg.[2]	5.0	5.0	4.5	6.0
Niacin, mg.[2]	8.0	6.0	5.0	5.0
B12, mcg.[3]	7.0	5.0	5.0	5.0

[1]I. U./lb. = International Units per pound.
[2]mg. = milligrams
[3]mcg. = micrograms

In any emergency during which the feed supply is reduced, some animals in the herd can be fed a maintenance ration more readily than others. Feeding above the maintenance allowance should be given priority as follows:

1. Lactating sows and litters.
2. Shotes from weaning to 100 pounds.
3. Pregnant animals with emphasis on the last month of gestation.

A good principle to keep in mind is that the younger the animal, the more susceptible it is to nutritional deficiencies. A rule of thumb for feeding maintenance rations to hogs is that it requires approximately ¾ pound of total digestible nutrients per 100 pounds liveweight.

During an all-out war, when the feed suppy may be reduced for a considerable period of time, market hogs should be fed at a rate of not less than 70 to 75 percent full feed. This may require an adjustment in the number of market hogs produced in order to properly utilize the feed available. Although the practice of feeding a ration 70 to 75 percent full feed would require more labor than full feeding, it would be more efficient from the standpoint of feed conversion than feeding a greater or lesser amount.

Another method of improving the efficiency of the overall feed conversion would be to slaughter market hogs at a minimum weight of 200 and a maximum of 225 pounds. Experimental evidence indicates that the efficiency of the pig decreases as its liveweight increases. However, when the feed eaten by the breeding herd plus the feed eaten by the pig up to weaning is charged to the pigs, the total feed required to produce 100 pounds liveweight declines up to the weight of 200 pounds. Further increase in liveweight to 250 pounds would require a slight increase in feed per 100 pounds of pork. However, after a weight of 200 to 225 pounds is reached, only a third of the additional edible product is lean meat.

Table 1, taken from the National Research Council's Publication 468 (1959), gives the nutrient requirements of swine at different stages of its life cycle. For practical rea-

Table 2. Essential amino acid requirement of growing pigs (25 to 70 lbs.)[1]

Amino acid	Percent of total diet
Ariginine	.20
Histidine	.20
Isoleucine	.60
Leucine	.60
Lysine	.65
Methionine[2]	.60
Phenylalanine[3]	.50
Threonine	.40
Tryptophan	.20
Valine	.40

[1]Reproduced from N.R.C. Publication 648, 1959.
[2]Cystine can replace ½ of the methionine requirement.
[3]Tyrosine can replace 30% of the phenylalanine requirement.

sons, the number of periods of the growing and finishing stages has been reduced from 5 to 3 and the bred sows and gilts have been grouped together.

The protein needs of swine should be thought of in terms of proper balance of the essential amino acids (shown in Table 2), as well as the quantity of protein. Recent experimental evidence indicates that when the essential amino acids are properly balanced, swine will make normal growth with considerably less protein than was formerly recommended. Thus, feeding a combination of protein supplements should improve the quality of the protein, particularly if combinations are used which supplement each other in balancing the amino acids.

The essential amino acid requirement for the growing pig (25 to 70 pounds) is shown in Table 2.

The levels of amino acids required by swine at other than 25- to 70-pound weights have not been determined. However, it is reasonably safe to expect the requirement to be propor-

tionate to the protein level. In other words, the requirement of a finishing hog on a 12-percent protein ration could be expected to be approximately 75 to 80 percent of the above requirement for a hog on a 16-percent protein feed.

Various combinations of ingredients can be used to meet the nutrient requirements for various ages of swine. A few of the combinations are given in Tables 3, 4, 5, and 6.

In areas where good legume pasture is available, nonpregnant mature animals can often be maintained on pasture alone. Pregnant animals on legume pasture would require some additional concentrate feed.

The rations suggested in Table 7 are for use during any period when the ingredients are available. They are properly balanced for vitamins, minerals, and quantity and quality of protein and should give excellent results. Other combinations may be fed and satisfactory results obtained provided the nutrient requirements as shown in Table 1 are met.

For further information or questions regarding emergency rations for swine, consult your County Agricultural Agent of the University of Hawaii Cooperative Extension Service.

Table 3. Suggested emergency rations for gestating sows and gilts (daily)

Ration Ingredients	Pounds			
	1	2	3	4
Garbage (undiluted)	15	–	–	–
Honohono or panicum grass	6-8	6-8	6-8	6-8
Molasses or pineapple syrup	–	3	–	3
Pineapple bran	–	3	3	2
Coconut oil meal	–	–	2	–
Tuna meal or meat & bone meal	0.25	0.8	0.4	1

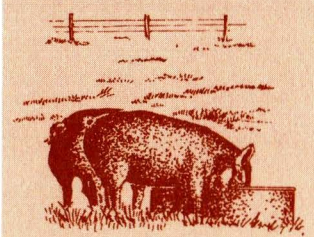
Table 4. Suggested emergency rations for lactating sows and gilts (daily)

Ration Ingredients	Pounds			
	1	2	3	4
Garbage (undiluted)	30	10	20	–
Honohono or panicum grass	10-12 pounds or limit of appetite			
Molasses or pineapple syrup	–	3	3	3
Pineapple bran	–	4	2	4
Fishmeal or meat & bone meal	½	1	2/3	1
Coconut oil meal	–	–	–	4

Table 5. Suggested emergency growing rations 50 to 125 lbs. (daily)

Ration Ingredients	Pounds			
	1	2	3	4
Garbage (undiluted)	To limit of appetite	–	–	–
Honohono or panicum grass	To limit of appetite	To limit of appetite	To limit of appetite	4
Fishmeal or meat & bone meal	–	1	1/3	1/3
Cull fruits & vegetables	–	–	6-8	–
Molasses or pineapple syrup	–	1	1	2
Coconut oil meal	–	–	–	1
Pineapple bran	–	1	–	1
Stabilized fat	–	1/3	–	–

Table 6. Suggested emergency finishing ration
125 lbs. to market (daily)



Ration Ingredients	Pounds			
	1	2	3	4
Garbage (undiluted)	20	–	–	–
Honohono or panicum grass	5-6 or to limit of appetite	To limit of appetite	5-6	5-6
Cull fruits or vegetables	–	10	–	–
Fishmeal or meat & bone meal	–	1/2	3/4	1/3
Molasses or pineapple syrup	–	3	3	3
Pineapple bran	–	3	3	1
Coconut oil meal	–	–	–	2
Stabilized fat	–	–	–	3/4

Table 7. Balanced rations for swine (daily)

Ration ingredients	Starter	Growing 50-125 lbs. 1	2	3	125 lbs. to market	Gestation ration
Corn	10.0	–	–	–	–	–
Milo	40.7	39.45	36.95	41.95	41.95	–
Screenings	–	–	–	–	–	21.0
Fat, stabilized	5.0	2.50	–	–	7.5	–
Molasses	5.0	20.00	20.00	20.00	20.00	30.00
Millrun	–	10.0	–	10.0	–	–
Coconut oil meal	–	–	25.00	–	5.0	25.00
Soybean oil meal	20.0	–	–	–	–	–
Cottonseed oil meal	–	5.0	–	5.0	–	–
Meat and bone meal	5.5	5.0	5.0	5.0	5.0	3.0
Fishmeal	5.0	7.5	7.5	7.5	5.0	5.5
Dried skim milk	4.0	–	–	–	–	–
Pineapple bran	–	5.0	–	5.0	10.0	–
Dehydrated alfalfa meal	4.0	5.0	5.0	5.0	5.0	–
Sun-cured alfalfa pellets	–	–	–	–	–	15.0
T.M. Salt	0.5	0.5	0.5	0.5	0.5	0.5
Antibiotics (10 gms./lb.)	0.3	0.05	0.05	0.05	0.05	–
Total	**100**	**100**	**100**	**100**	**100**	**100**

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