Growing-Finishing Swine In Outdoor Lots

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Feeding growing-finishing pigs in a low investment system is usually done in outdoor lots with little or no permanent vegetation. Growing-finishing swine, unlike breeding stock, make poor use of pasture; thus pasture is seldom provided. With proper management, pigs can usually gain as rapidly in outdoor lots as in confinement systems but may require slightly more feed per pound of gain.

The main advantage of the outdoor lot system of finishing hogs is its low initial investment. Disadvantages of feeding hogs in outdoor lots include high labor requirements and less climatic control. It is also difficult to control internal parasites and excessive dust or mud that may complicate any existing disease problems. For additional information concerning economics of swine production with low investment facilities see Fact Sheets 3676, and 3678 through 3683.

Goals

In outdoor lot systems of swine production, hogs should reach market weight (240 lb.) in 180 days or less. Feed efficiency should not exceed 3.5 pounds of feed for each pound of gain from 40 to 240 pounds. In addition, hogs should be produced that yield lean, meaty carcasses. Carcasses should average 30.0 inches or more in length, less than 1.2 inches of backfat at the last rib, 5.0 square inches or more of loin eye and be at least 54% lean meat. Eighty percent or more of the hogs produced should grade USDA No. 1 or 2 when marketed.

Housing

Ideal locations for outdoor lot finishing include sandy soils, shade, good quality water and natural protection. The site should have a slope between 2% and 5% to maintain adequate drainage without causing excess runoff and erosion. The space allotted per pig in outdoor lot systems varies depending on soil type, drainage, amount of rainfall, etc. Usually 100 sq. ft. of lot space is sufficient. While a lot capacity of 50 head is desirable to reduce social stresses, as many as 100 head may be fed in one lot provided they are uniform in size.

Permanent or portable shelters that provide 4 sq. ft. of roof area per head for pigs up to 100 lb. and 6 sq. ft. for pigs over 100 lb. are recommended. Ideally, these shelters will be open during the summer and closed on all but the south side during the winter. It is often advantageous to use straw for bedding in the winter and imperative that the shelter area be kept dry.

Sprinklers that emit large droplets of water and are located over sand are recommended to keep pigs cool in the summer. Misters or foggers are not recommended. One feeder space should be provided for each four or five pigs. One watering space will serve up to 15 head with a minimum of two waterers per pen.

Nutrition

Feed represents the major cost of producing pork. Thus, diets that supply proper nutrition at least cost will help increase profits considerably. A commercial protein, mineral and vitamin supplement is often mixed with ground grain. This practice is sound if the available commercial supplements are properly formulated and priced competitively. Tables 1 and 2 present examples of rations using this method. Another possibility is to purchase a base mix which contains all the necessary minerals and vitamins and mix it with grain and soybean meal. It is important to note that the least cost ration may not be the most profitable. Quality of the ration is important.

Many pork producers purchase individual ingredients and formulate their own diets. A pork producer will need to consider cost of ingredients, equipment and labor in determining the feasibility of this practice. Suggested diets for pork producers who mix their own diets are shown in Tables 3 and 4. The relative price and availability of feed ingredients often dictates which is selected. Antibiotics or other feed additives should usually be added to these diets to improve feed efficiency and increase growth rate.

Table 1. Grain Plus Commercial 40 Percent Protein Supplement.

Ingredients	40 to 120 lb. (lb.)	120 lb. to market (lb.)
Ground sorghum grain (9.0% protein)	1550.0	1675.0
Protein-mineral-vitamin-supplement	450.0	325.0
Total	2000.0	2000.0
Percent protein	16.0	14.0

Table 2. Grain Plus Commercial 36 Percent Protein Supplement.

Ingredients	40 to 120 lb. (lb.)	120 lb. to market (lb.)
Ground sorghum grain (9.0% protein)	1480.0	1630.0
Protein-mineral-vitamin-supplement	50.0	370.0
Total	2000.0	2000.0
Percent protein	16.0	14.0

The diets in Tables 3 and 4 are formulated for average quality hogs. For fast growing, extremely lean hogs it may be feasible to substitute 40 lb. of 44 % soybean for 40 lb. grain in the growing diets in Table 3 and 20 lb. of soybean meal for 20 lb. grain in the finishing diets (Table 4). For additional information on the protein needs of extremely lean gain pigs see OSU Extension Facts ANSI-3509 "Protein Needs of High Lean Gain Pigs."

Feed additives often used in swine diets include apramycin, bambermycin, carbadox, chlorotetracycline, lincomycin, neomycin, oxytetracycline, tiamulin, tylosin, viginamycin and arsenic compounds such as arsanilic acid. Copper sulfate, when added at levels of 125 to 250 ppm in swine diets, also has a growth promoting effect.

Some antibiotics or chemotherapeutics and all arsenic and sulfa compounds are required by Federal Law to be withdrawn from finishing diets within a specified time prior to slaughter. Always read the label and comply with the withdrawal time. It is the livestock producer's responsibility to comply with withdrawal periods.

For more information on swine nutrition see OSU Extension Facts ANSI-3500 "Swine Nutrition," ANSI-3502 "Feedstuff Composition for Swine Diets," ANSI-3503 "Relative Value of Grains for Market Hogs," and ANSI-3504 "Feeding Wheat to Hogs."

Table 3. Suggested Growing Diets (40-125 lbs.).

	Diet Number			
Ingredients	1	2	3	4
Corn, yellow	1558	——	——	——
Sorghum grain	——	1549	800	——
Wheat, hard winter	——	——	800	1645
Soybean meal, 44%	390	400	350	305
Calcium carbonate	16	17	17	17
Dicalcium phosphate	26	24	23	23
Salt	7	7	7	7
Vitamin-trace mineral mix*	3	3	3	3
Total, lb.	**2000**	**2000**	**2000**	**2000**
Protein, %	15.40	15.70	16.10	16.70
Lysine, %	.75	.75	.75	.75
Tryptophan, %	.19	.20	.21	.24
Threonine, %	.58	.55	.55	.56
Methionine + Cystine, %	.54	.46	.52	.59
Calcium, %	.66	.66	.66	.66
Phosphorus, %	.55	.55	.55	.55
Metaboizable energy, kcal/lb.	1492	1438	1437	1435

*See Table 5.

Table 4. Suggested Finishing Diets (125 lbs. to Market).

	Diet Number			
Ingredients	1	2	3	4
Corn, yellow	1662	——	——	——
Sorghum grain	——	1649	852	——
Wheat, hard winter	——	——	851	1754
Soybean meal, 44%	290	304	250	200
Calcium carbonate	16	17	17	17
Dicalcium phosphate	22	20	20	19
Salt	7	7	7	7
Vitamin-trace mineral mix*	3	3	3	3
Total, lb.	**2000**	**2000**	**2000**	**2000**
Protein, %	13.70	14.00	14.50	15.10
Lysine, %	.62	.62	.62	.62
Tryptophan, %	.17	.17	.19	.21
Threonine, %	.51	.48	.48	.49
Methionine + Cystine, %	.50	.42	.48	.56
Calcium, %	.61	.61	.61	.61
Phosphorus, %	.50	.50	.50	.50
Metaboizable energy, kcal/lb.	1499	1442	1440	1439

*See Table 5.

Disease Control

Prevention of disease in outdoor lots is similar to controlling diseases in confinement. However dirt and dust can complicate and make the control of disease such as pneumonia more critical. Therefore, proper sanitation and good management are very important. Some items to consider when setting up a proper disease control system include:

1. Control visitor traffic and other carriers of disease.
2. Don't allow outside vehicles such as feed, rendering and fertilizer trucks in area of swine production.
3. Provide footwear (overshoes) to visitors that you allow in the production facilities.
4. Change clothing and shoes after visiting neighboring farms, auctions, shows, fairs etc. where hog disease may be present. A 24-48 hour waiting period before returning to your own hog farm would even be a better safeguard to minimize the transfer of disease.

Table 5. Suggested Vitamin-Trace Mineral Mix*.

Ingredient	Amount per pound premix
Vitamin A	900,000 I.U.
Vitamin D	100,000 I.U.
Vitamin E	5,000 I.U.
Vitamin K (Menadione)	660 mg
Riboflavin	1,200 mg
Panthothenic Acid	4,500 mg
Niacin	7,000 mg
Choline Chloride	20,000 mg
Folic Acid	300mg
Biotin	40 mg
Vitamin B12	5 mg
Copper	.4%
Iodine	.008%
Iron	4.0%
Manganese	.8%
Zinc	4.0%
Selenium	.012%

*Vitamin and trace-mineral mixes may be purchased separately. This is advisable if a combination vitamin-trace mineral premix is to be stored longer than 3 or 4 months. Vitamins may lose their potency in the presence of trace minerals if stored for a prolonged period.

5. Discourage dogs and wild animals from coming into the production unit.
6. Vaccination for erysipelas may be advisable if the disease is prevalent in your area. Consult your local veterinarian to determine disease incidence.

Your veterinarian should be called immediately if unusual problems or losses occur. Watch closely for any signs of illness such as labored breathing, coughing or scours. Early treatment is the cheapest and most effective way of preventing death losses.

Control of Internal Parasites

To help control internal parasites (worms), it is recommended to disk outdoor lots and leave them idle for six weeks if possible between pig crops. Therapeutic control will usually be necessary too, in an outdoor lot system. If possible, have your local veterinarian examine fecal samples to determine the type of internal parasites infecting your herd.

Table 6 lists several anthelmintics (dewormers) and the parasites they are effective against. Piperazine and Tramisol (levamisole hydrochloride) can be administered in feed or water. Atgard (dichlorovos), Banminth (pyrantel tartrate), Safegard (fenbendazole) and Hygromix are administered in feed only. Hygromix needs to be fed in a continuous program. Ivermectin is an injectable anthelmintic that is also effective against lice and mange. Banminth can be used as a single therapeutic treatment (purge wormer) or fed in a continuous program. When Piperazine, Atgard, Tramisol, Safegard or Banminth (fed as a purge wormer) are used, it is usually recommended that pigs be dewormed at 9 to 10 weeks of age and again 30 days later. Read the product label carefully on anthelmintics before using and observe all restrictions and precautions.

Control of External Parasites

External parasites (lice and mange) can be controlled in farrow-to-finish herds by purchasing initial breeding stock and replacement boars that are free of these parasites. In operations in which feeder pigs are purchased to feed out, it may be very difficult to consistently buy feeder pigs that are free of lice and mange.

External parasites can also be controlled by the use of insecticides. Spraying animals with insecticides is the most common method used, but dusting or dipping is also used. Injectable ivermectin can also be used

Table 7. Insecticides.

Insect	Insecticide	Min. Days from Appl. to Slaughter
Lice and Mange	Malathion	0
	Ectiban EC	5
	Prolate	1
	Ectrin	1
	Taktic	1
	Ivermectin (injectable)	18
Lice Only	Co-Ral	0
	Rabon	0
	Methoxychlor	0
	Tiguvon (Pour on)	14

Table 6. Effectiveness of Swine Anthelmintics (Dewormers).

Parasite	Piperzine	Tramisol	Atgard	Banminth	Safegard	Hygromix	Ivermectin
Roundworms	yes	yes	yes	yes	yes	yes	yes
Nodular worms			yes	yes	yes	yes	yes
Whipworms		yes	yes		yes	yes	
Threadworms		yes	yes				yes
Lungworms		yes			yes		yes

to control lice and mange. To effectively control lice or mange, it is necessary to spray sleeping quarters as well as treating the individual animals.

Table 7 lists some of the insecticides that can be used to control lice or mange. Read the product label on any insecticide before using and observe all restrictions and precautions. Some insecticides should not be used on pigs under three months of age. Be sure to follow waiting periods before selling hogs for slaughter.

The Pork Industry Handbook is a national project sponsored by State Cooperative Extension Services, pork producers and the USDA. The Handbook, is considered by many to be the most complete current source of information on swine production available.

It contains approximately 130 sheets on production systems, breeding and genetics reproduction, nutrition, management, housing, waste management, herd health, marketing, and pork quality.

Pork producers and other interested people may obtain the Pork Industry Handbook on a subscription basis for $50.00 by contacting their local OSU County Extension Center or by writing Central Mailing Service, Oklahoma State University, Stillwater, OK 74078. The subscription plan provides for a good quality vinyl notebook containing all of the fact sheets and an updating service which automatically sends you copies of any fact sheets that are revised.

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