Feeding And Managing Growing-Finishing Hogs

The goal of any swine operation should be efficient production of pork. Profitability for the producer who is feeding purchased feeder pigs depends totally on the cost of getting a pig from 40 pounds to market weight. While farrow-to-finish operations have other costs, the growing-finishing period still accounts for more than 60 to 70 percent of cash costs. Whether feeding purchased feeder pigs or pigs raised on the farm, the profits or losses depend on the cost of production and market price. Proper nutrition, adequate housing, and good health and marketing programs will improve the chances for profits on these operations.

Nutrition

The largest cost in feeding hogs to market is feed cost. Reducing the cost of feed ($/ton) does not always reduce the feed cost ($/hundredweight hog sold). A good feed program and proper feed management will result in the best use of feed dollars.

Developing A Feed Program

Most farmers have a standard set of diets for their farms. They do not, however, have a feeding program. A good feeding program allows pigs to perform at their potential with a minimum of waste.

The first step in designing a feeding program is determining how much a pig will eat each day. Pigs require a set level of many nutrients each day, whether they eat 4 or 10 pounds. As feed intake decreases, the nutrient content of the diet must increase to meet the daily requirement. Temperature, housing, health status, and genetics all affect feed intake. Temperatures above 70°F decrease intake, while temperatures below 65°F increase intake. Housing can reduce the effect of temperature. However, poor designs and over-crowding in some operations further reduce intake. The first symptom of many swine diseases is anorexia or reduced appetite. Appetite can also be changed by selection. By monitoring feed intake for a pen or barn, diets can be adjusted to meet daily nutrient requirements.

The actual levels of nutrients in the diet depend on intake, the potential for lean growth, and sex. To maintain lean growth, nutrient levels in the diet must be increased during periods of reduced intake (Table 1), resulting from changes in temperature, illness, or selection. A seasonal feeding program is the simplest way to account for changes in intake. Table 2 shows estimates of feed intake at different daily mean temperatures (average temperature for a 24-hour period). For most of Alabama, three diets are needed for the growing-finishing period. From November to February, the nutrient content can be slightly lower than normal (5 percent). For the summer months (May through August), nutrient levels should be increased to offset lower feed intake. Typical growing-finishing diets should be adequate during the spring and fall. For best results, base your program on actual temperatures for your farm, county, or area.

Feeding an animal selected for daily lean gain is a recent problem (Table 3). Animals selected for lean gain appear to consume less feed and have higher daily nutrient requirements. A study at Auburn University compared a control line with no selection and a line selected for weight at a constant age. When 7 percent fat was added to a 16 percent protein diet, performance improved in both lines. Increasing the levels of all other nutrients resulted in little change in performance of the control line. In the select line, however, gain increased from 2.0 to 2.3 pounds per day, backfat decreased 0.1 inches, and loin eye area increased. Research at Purdue University and the University of Kentucky showed this point as well. When feeding pigs from lines selected for lean gain, daily nutrient intake must be increased for the pigs to reach their genetic potential. Depending on the lines, 3.5 to 7 percent fat and 0.75 to 0.95 percent lysine are required in the diet to reach this potential for pigs from 125 pounds to market.

From 75 pounds to market, gilts respond to a higher level of lysine than barrows. Barrows and gilts differ in performance and in carcass quality. According to a 1989 report, barrows grew 8 percent faster, consumed 13 percent more feed, but required 4 percent more feed per pound of gain than gilts. Gilts were 18 percent leaner, had 8 percent larger loin eyes, and had a higher percent muscle than barrows. Barrows
Average daily gain (ADG) in percentage of normal and per day.

**Table 1. Nutrient Recommendations For Growing- Finishing Swine At Various Levels Of Intake.**

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Weight class, lb.</th>
<th>80-125 lb</th>
<th>110 lb.- Market</th>
</tr>
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<tbody>
<tr>
<td>Metabolizable energy, Kcal</td>
<td>1400</td>
<td>1400</td>
<td></td>
</tr>
<tr>
<td>Protein, %</td>
<td>15.0</td>
<td>14.0</td>
<td></td>
</tr>
<tr>
<td>Lysine, %</td>
<td>0.80</td>
<td>0.65</td>
<td></td>
</tr>
<tr>
<td>Calcium, %</td>
<td>0.65</td>
<td>0.60</td>
<td></td>
</tr>
<tr>
<td>Phosphorus, %</td>
<td>0.55</td>
<td>0.50</td>
<td></td>
</tr>
<tr>
<td>Salt, %</td>
<td>0.35</td>
<td>0.35</td>
<td></td>
</tr>
<tr>
<td>Average daily gain</td>
<td>1.54</td>
<td>1.80</td>
<td></td>
</tr>
<tr>
<td>Average daily feed intake, lb.</td>
<td>3.85</td>
<td>6.30</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2. Effects Of Temperature On Daily Feed Intake.**

<table>
<thead>
<tr>
<th>Temperature (°F)</th>
<th>Intake (% of normal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>55</td>
<td>105</td>
</tr>
<tr>
<td>65-70</td>
<td>100</td>
</tr>
<tr>
<td>85</td>
<td>85</td>
</tr>
<tr>
<td>95</td>
<td>75</td>
</tr>
</tbody>
</table>

**Table 3. Nutrient Recommendations For Pigs From 125 Pounds To Market In The Southeast.**

<table>
<thead>
<tr>
<th>Genetic Potential</th>
<th>Metabolizable Energy, Kcal/lb.</th>
<th>Lysine, %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lb./day</td>
<td>lb./day</td>
</tr>
<tr>
<td>6.9</td>
<td>1.400</td>
<td>1,584</td>
</tr>
<tr>
<td></td>
<td>6.1</td>
<td>1,606</td>
</tr>
<tr>
<td>Averagea</td>
<td>6.9</td>
<td>1,546</td>
</tr>
<tr>
<td>Goodb</td>
<td>1,420</td>
<td>1,606</td>
</tr>
<tr>
<td>Superiorc</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

- aNational Research Council, 1989, ADG = 1.8 lb./day.
- bAuburn University experiments, ADG = 2.3 lb./day.
- cCornell University experiments, ADG = 2.5 lb./day.

and gilts also respond differently to increased dietary protein. Increasing protein above 13 to 14 percent did not affect performance, fat, or muscling in barrows. Gilts grew faster and were more efficient at higher levels of protein. Increasing protein above 13 percent decreased backfat and increased loin eye area and percent muscle. In an average group of pigs, 0.65 percent lysine is adequate for barrows. Carcass quality and performance of gilts will be increased with 0.80 percent lysine. Split-sex feeding is difficult for some farmers. As more packers go to a value-based buying program, the premiums will often offset the problems with split-sex feeding.

**Feed Management**

Feed management is commonly the weakest link in feeding programs for growing-finishing pigs. Good feed management is also the quickest way to lower feed costs. Routine feed and ingredient analysis, proper feeder maintenance, and proper use of growth promotants are components of good feed management.

Laboratory analyses of feed ingredients and complete feeds reduce the incidence of nutritional problems. Diet formulations based on analyses allow compensation for poor-quality ingredients and increased use of high-quality feed ingredients. Routine analysis of feed is the cheapest way to check formulations and mixing techniques. Without analysis, the only check for feed quality is pig performance. Feed samples should be checked at least twice a year and preferably once each quarter.

Proper feeder maintenance is another way to reduce feed costs. On the average, 15 percent of the feed fed to growing-finishing hogs is wasted. Feed wastage has been as high as 30 percent on some farms. Reducing feed wastage is only a matter of keeping feeders repaired and adjusted. Feeders should also be free of stale, spoiled, or moldy feed. Check feeder troughs daily to insure that fresh feed is available. A buildup of spoiled or moldy feed will reduce feed intake. There is also the risk of aflatoxin or other mycotoxins building up in the trough. Provide adequate feeder spaces to insure optimum feed intake. One feeder space is adequate for three 30- to 50-pound pigs and four 50- to 220-pound pigs.

Additional information concerning the nutrient requirements of growing-finishing swine can be found in Circular ANR-639, “Swine Diet Recommendations For Alabama.”

**Housing**

Growing-finishing facilities vary from a single strand electric fence to a totally enclosed, environmentally controlled unit. Despite their differences, all facilities should have several things in common. They should provide some shelter from the environment (heat, cold, rain). The ideal number of pigs per pen is 25 to 30, whatever the facility. All can be efficient production units if managed correctly.

**Drylot**

Fenced dirt lots are the cheapest growing-finishing facilities to construct. They can also result in the poorest performance because of buildup of internal parasites and disease and lack of protection from the environment. Providing 5 to 6 square feet of shed space per animal will reduce the environmental effects on performance. With a stocking rate of 50 to 100 pigs per acre, manure can dry, thus reducing odors.

**Low-Investment Confinement**

Low-investment confinement facilities cost more to construct but provide better protection from the environment. The space requirements depend on the building design. In buildings with solid floors and outside aprons, each growing-finishing pig needs 6 square feet inside and 6 square feet outside. Space requirements for other low-investment designs with
solid floors are 8 to 10 square feet per growing pig and 10 to 12 square feet per finishing pig.

When the floor is solid or partially slatted, pen cleanliness can be a problem. Pen design and layout can help reduce the problem. Solid partitions between pens except over the slats or open gutter stimulates dunging in the disposal area. Waterers and sprinkler systems in this area are also important. Feeders should be opposite the dunging area. The solid portion of the floor should slope away from the feeding area ½ to ⅛ inch per foot. A drop of 1 to 2 inches between the solid and slatted area will help reduce waste problems on the solid area.

**High-Investment Confinement**

High-investment facilities are costly but require less space and labor. These facilities provide the greatest protection from environmental conditions. Depending on the type of structure, these facilities either offset environmental problems or create a new environment. High-investment growing-finishing facilities are of two designs: curtain-sided and environmentally controlled.

As the name implies, curtain-sided facilities have open sides with movable curtains. These buildings make use of natural ventilation but can be closed during cold weather. Curtain controls are either manual or automatic (thermostat controlled). One problem with these facilities is winter ventilation. Closed curtains eliminate natural ventilation. Moisture and odor control require mechanical ventilation (Table 4). When you follow space recommendations, supplemental heat is rarely required for growing-finishing pigs in the South.

Environmentally controlled facilities create a "new" environment with mechanical ventilation and heating and cooling equipment. Ventilation requirements can be found in Table 4. As with curtain-sided facilities, minimum and winter rates are necessary for moisture and odor control. Summer rates provide cooling. If the ventilation system is designed and set properly, there should be little seasonal effect on pig performance. Heating or cooling can be used, but the added cost of operation may not be offset by improved performance.

**Environment**

Environmental conditions can play a major role in the performance of growing-finishing pigs. The optimum temperature range is 64°F to 70°F. Extreme hot or cold temperatures, high humidity, and wind can have a negative effect on pig performance.

**Cold Stress**

Cold stress on growing-finishing pigs in the South is caused by management as much as it is by temper-
Overcrowding adds to the heat load and increases heat stress, but following accepted space requirements will eliminate this factor. In environmentally controlled facilities, adequate ventilation is critical. Fan systems should be designed to meet summer ventilation requirements. They should be routinely cleaned and maintained. Fan controls should also be checked periodically.

**Health**

Health-related problems are silently stealing profits from growing-finishing hogs on many swine farms. Although acute death loss and sick hogs are not difficult to see on the finishing floor, the effects of chronic disease in these hogs may not always be readily apparent. To avoid both acute and chronic disease problems in the grower-finisher, a swine operation should strive for “high health status.” To accomplish this, pay attention to the following points.

**All-In All-Out Production**

Recent research has firmly established that a “true” all-in all-out system during the growing-finishing period improves performance. This improvement amounts to a 5 to 10 percent increase in daily gains, resulting in fewer days to market. Feed efficiency also improves 5 to 10 percent. All-in all-out production is widely practiced in the large swine farms that are continually evaluating their production performance and their costs. They know it works for them, and it can work for the smaller producer also.

“True” all-in all-out performance means keeping pigs together from farrowing to finishing in groups ranging no more than 2 weeks apart in age. As pigs grow they should not have nose-to-nose contact with older hogs. The best way to accomplish this is to put solid partitions between pens, with separate rooms being even better. All-in all-out works because the disease-causing organisms (viruses, bacteria, mycoplasmas, etc.) are usually spread from animal to animal. Younger pigs, especially those moving into the grower from the nursery, have less well-developed resistance to diseases. The older hogs that they may contact during grow-finish are likely to spread such organisms to them, especially those causing respiratory diseases. The older hogs have already been exposed and have become somewhat resistant. In the process, however, hogs may undergo bouts of disease that can set them back and increase days to market. Keeping pigs together in close age groups prevents exposure to disease-causing organisms from older hogs and avoids setbacks.

An inherent part of “true” all-in all-out is the marketing of hogs from a pen as few times as possible. It is best to market from a pen twice, the second time clearing it out. The practice of “sorting back” hogs that are doing poorly should be avoided. This defeats the purpose of keeping hogs of close age groups together. Hogs doing poorly are also often disease-carriers and should not be exposed to younger hogs.

**External And Internal Parasites**

External parasites such as lice and mange mites can decrease feed intake and gains significantly. Fortunately, these parasites can be controlled with routine treatments. Chemicals to delouse and treat for mange should be sprayed when hogs move into the grower and again 2 weeks later to help break the parasites’ life cycles. Alternatively, an injectable dewormer, ivermectin, will treat mange mites and sucking hog lice as well as treat internal parasites (worms).

Internal parasites such as roundworms can cause sizable production losses by damaging liver and lung tissues. Other internal parasites such as kidney worms may be major problems in hogs on dirt lots or pasture. In total confinement grower-finisher units these worms are usually less of a problem. However, if sanitation is not good and feces builds up, roundworms can be significant factors in lowering production in confinement units. The amount of feed required for a pound of gain can be significantly increased as parasite loads become heavier (Table 5). Establish a good sanitation program to help prevent worms from becoming robbers of productivity. Washing sows’ and gilts’ underlines before moving them into the farrowing crates will also help reduce transmitting parasites to newborn pigs in the crates.

Most modern dewormers will help control roundworms. Many dewormers can be administered in the feed, while others may be injected. Some, such as pyrantel tartrate (Banminth) and hygromycin B (Hygromix) can be fed as preventative for long periods of time but may be less cost-effective depending on duration of treatment. These may be more effective in swine finishing on dirt. Rotation of pasture or drylots may help reduce reinfection with internal parasites after deworming.

Deworming programs should be based on the amount and type of parasites present in your herd. Your veterinarian can perform fecal flotation exams of fresh manure samples for presence of worm eggs. It is best to do fecal exams on young pigs shortly after they move into the grower. Some operations may need only sows to be dewormed before each farrowing. Others with heavier worm burdens may require more frequent deworming during grow-finish. Slaughter checks can also determine if worm larvae migration through the liver is causing significant problems. Your veterinarian can also be looking for lung worms and kidney worms. If these parasites are found on fecal exams or at slaughter checks, consult...
Timely fashion in order to take appropriate action.

Veterinarian in the area. It is best to examine at least periodic slaughter checks of your hogs to see what production. Examination of the livers, lungs, and losses occur, you need necropsies performed in a timely fashion in order to take appropriate action. Feeder pigs can arrange to have necropsies performed in a high pressure sprayer and then treating with an effective disinfectant. A listing of common disinfectants and their uses is in the Pork Industry Handbook (PIH-80, "Selection and Use of Disinfectants in Disease Prevention"). When roundworms are present in growing-finishing pigs in confinement, cleaning should be followed by a 2 percent lye solution that will remove roundworm eggs from concrete floors.

Veterinary Visits And Consultations

Establish a relationship with a veterinarian who is knowledgeable about swine diseases and interested in the swine industry. Your veterinarian can make periodic slaughter checks of your hogs to see what diseases are occurring during the last 4 to 6 weeks of production. Examination of the livers, lungs, and snouts can provide a good indication of the effectiveness of your health program. If your veterinarian cannot conduct periodic slaughter checks, some slaughter plants can arrange to have it done by a veterinarian in the area. It is best to examine at least 30 hogs or a number according to a statistical table based upon the type and amount of disease that is suspected to be present. It is desirable to check the "middle of the road" finishers in a slaughter group.

Your veterinarian should also conduct necropsies (autopsies) of any hogs that die unexpectedly, in order to reach a good diagnosis of the cause. Your health program should be designed to avoid death loss. If losses occur, you need necropsies performed in a timely fashion in order to take appropriate action. Feed, water, or injectable medications should be used based upon a good diagnosis, whenever possible. Your veterinarian should be involved in your routine herd-monitoring program. He or she can be invaluable when evaluating health-related changes in feed intake and conversion and growth. Details on establishing a herd-monitoring program are in Circular ANR-673, "Swine Herd Monitoring."

Antibiotics And Residue Avoidance

Medicated feed can be included at three different levels: performance improvement, disease prevention, and disease treatment. For example, chlortetracycline may be fed at 10 to 50 grams per ton of feed for growth promotion and improved feed efficiency, at 50 to 100 grams per ton of feed for the prevention of bacterial enteritis (scours), and at 100 to 200 grams per ton of feed for the treatment of scours.

Growth-promotant antibiotics can improve nutrient usage and gain and feed efficiency in growing-finishing swine. These products may act directly on the pig's growing tissues, alter the bacterial population of the intestinal tract, or reduce "low grade" disease problems. Consult the Pork Industry Handbook (PIH-31 "Feed Additives for Swine") for more information.

Water medications are preferred for treatment of some diseases because sick hogs will often drink when they will not eat. This is particularly useful in newly arrived feeder pigs. Observe hogs carefully during water medication, however, to insure that there is no decrease in water intake because of the flavor of the water.

Individual pig treatment is sometimes necessary, in particular with diseases that can cause death rapidly. Injecting an appropriate antibiotic may be the only effective way to treat such animals, despite the labor intensive nature of the treatment. Diseases such as Actinobacillus (Hemophilus) pleuropneumonia and salmonella cholerasuis are two examples of diseases that may require such medication. In these cases, mark injected pigs with a crayon and treat for 3 continuous days to insure proper durations of therapy. Consult with your veterinarian on the proper type and doses of injectable antibiotics.

It is very important to check the labels of all medications used, whatever their route of administration. Some producers are guilty of under treating when they do not include the proper amount of antibiotic in feed or water. It is critical to follow the drug label's withdrawal period before slaughter. Drug residues can be a major problem if drugs are not used carefully, resulting in carcass condemnation. Make sure that medicated feeds are followed with non medicated feed to "flush" the feeders, mixers, and other feed handling equipment. It may be necessary to wash equipment before using it for non medicated feed.

Proper use of pharmaceuticals is essential to insure the quality of pork. Detailed records of individual animal treatment and feed additive use must be kept and followed to prevent future pork quality problems. The National Pork Producers Council sponsors

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### Table 5. Effects Of Various Internal Parasites On Feed Conversion In Growing-Finishing Swine.\(^a\)

<table>
<thead>
<tr>
<th>Parasite</th>
<th>Load</th>
<th>Moderate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threadworms</td>
<td>5.9</td>
<td>7.7</td>
<td>44.1</td>
</tr>
<tr>
<td>Kidney worms</td>
<td>2.7</td>
<td>6.4</td>
<td>23.6</td>
</tr>
<tr>
<td>Whipworms</td>
<td>2.8</td>
<td>32.7</td>
<td>32.7</td>
</tr>
<tr>
<td>Large roundworms</td>
<td>5.6</td>
<td>7.6</td>
<td>15.2</td>
</tr>
</tbody>
</table>

\(^a\)Percent increase in feed:gain ratio.

Sanitation

All confinement growing-finishing pens should be cleaned and disinfected between each group of pigs. By practicing all-in all-out production in the grower-finisher you can accomplish this in an empty room or building. You can reduce the incidence of many diseases found in growing-finishing hogs by cleaning with a high pressure sprayer and then treating with an effective disinfectant. A listing of common disinfectants and their uses is in the Pork Industry Handbook (PIH-80, "Selection and Use of Disinfectants in Disease Prevention"). When roundworms are present in growing-finishing pigs in confinement, cleaning should be followed by a 2 percent lye solution that will remove roundworm eggs from concrete floors.
the Pork Quality Assurance Program (PQA), which is an integral part of the Alabama Swine Herd Monitoring Program. This is a three-stage, self-help program to help pork producers improve the quality of pork. The PQA manuals contain useful information on feed additives, injectables, and water medication. They also contain sample record sheets for monitoring individual animal treatments and medicated feed production and use. Participation in the program is voluntary but may be required by some marketing groups and markets. Information is available from the county Extension office or the Alabama Pork Producers.

Control Movement Of Visitors
Despite all the efforts to keep a farm free of particular diseases, they can break down in a few minutes if flow of people and vehicles is not closely controlled. This is particularly true in areas where there are nearby hog farms. Feed delivery trucks, repairpersons, sales agents, and veterinarians have been unwitting transmitters of disease. Insure that clean coveralls and rubber boots are available for visitors, along with disinfectant foot baths. It is even more effective to deny entry to all except visitors whose presence is critical. Some high health farms practice shower-in shower-out routines to prevent disease entry.

Marketing
The product of a good marketing plan is to receive the best possible price for finished hogs. Briefly stated, a good marketing plan is one that compares all pricing alternatives, then sells based on this comparison.

Commodity Market. For many producers, hedging hogs on the futures market has been considered too complicated. Few producers have an understanding of hedging or how it can help profitability. Hedging is simply a tool to lock in an acceptable future price for hogs, one that will insure profits or minimize losses, depending on the market. A futures contract covers 30,000 pounds, or about 130 230-pound pigs. Half and quarter contracts are also available. Some capital is involved (margin money). The amount depends on the number of contracts and the broker.

Options are a newer method of forward pricing. An options contract is an insurance policy. Hedging locks in a future price. Options lock in a minimum price. If the price rises above the locked-in price, the "option" would be not to use the contract. Options contracts are handled similar to other futures contracts—through a broker.

Selling Point. When selecting a selling point, consider price, transportation, integrity of the market, and additional services. Hog markets vary greatly. Some offer forward pricing contracts where the producer agrees to deliver a specified number of hogs for a set price. These contracts are set several months in advance of the sale. At buying stations, the selling price is usually known on delivery of hogs. Some markets buy on a grade basis, where a premium is paid for U.S. #1 grade hogs, and low quality hogs are docked in price. Distance to the market is also important. A price benefit can be offset by transportation charges. By taking some time to check on markets, you can get better prices for your hogs.

Selling Weight. Selling hogs at an ideal weight is another way to improve the price of hogs. Records and some knowledge of market prices are required to determine this weight. Market weights are determined to some extent by the market operators. Some markets dock prices for hogs that are light (usually less than 220 pounds) or heavy (usually greater than 260 pounds). The actual weights vary at different markets. You can justify selling little pigs during periods of high feed prices and low hog prices. Low feed prices and high hog prices justify feeding to heavier weights. If you review previous feed records, labor costs, and current feed and hog prices, you can determine the ideal market weight.

Live Versus Carcass Price. In the past, market price was based on live weight and visual appraisal. Most packers today use carcass measurements to estimate carcass quality and value. This value is passed on to the producer directly or indirectly. Some packers will let you select whether to sell on a live or carcass basis. When selling on a carcass basis, the market price is determined by carcass weight, dressing percent or yield, and some estimate of carcass quality. A report showing the base price, premiums, docks, and the measurements used to determine value usually accompanies the check. Even when selling on a live basis, buyers will use information on previous loads to adjust the final price. Producers with lean hogs in the acceptable weight range will benefit from carcass-based pricing. Other producers may or may not benefit from carcass pricing. However, carcass quality will affect the price paid for market hogs, regardless of how they are marketed.

Managing Purchased Feeder Pigs
Feeding purchased feeder pigs poses a special problem: mortality and poor performance immediately following purchase. The stress of sale, shipping, and mixing can leave these pigs weak and susceptible to disease. A good feeder pig finisher must overcome fatigue, thirst, hunger, social problems, and changes in diet, housing, and temperature.

Diseases resulting from stress are a major problem that accompany feeding purchased feeder pigs. Mingling pigs from different farms exposes them to diseases against which they may have no immunity. Shipping stress reduces their ability to fight off these
diseases. Management of newly arrived pigs must focus on keeping these new arrivals healthy and hungry. To do this, a good manager must overcome the stresses of shipping and any new problems that may develop shortly after arrival at the new location.

**Purchasing Feeder Pigs**

You can avoid many problems associated with feeding purchased feeder pigs by careful purchasing. Feeder pigs should appear healthy, vigorous, and alert. All males should be castrated and healed. Tails should be docked on all pigs. Ideally, all pigs should come from the same farm, one with a good health program, including parasite control and necessary vaccinations. This eliminates the problems that accompany commingled pigs.

**Transportation**

Transportation of pigs is the first point at which the new owner can begin to relieve stress and get feeder pigs started properly. The truck or trailer should be disinfected between loads of pigs and bedded with wheat or oat straw in winter and wet sawdust or sand in the summer. Shield pigs from direct drafts, but provide adequate ventilation. Load pigs promptly after purchase, but minimize excitement and eliminate abuse. Divide the load (by partitions) into groups of 50 pigs or less to improve pig comfort. Allow adequate space for each pig (Table 6). Loading correctly is often the difference between a successful pig feeder and an economic failure.

**Housing**

Housing for the newly arrived feeder pig is frequently a source of pig problems. Removing all other pigs from the receiving facility reduces the chances for a disease outbreak. All-in-all-out movement of feeder pigs can significantly reduce disease losses. If it is possible, isolate new pigs from those already on the farm. At least provide semi-isolation during the first 2 to 3 weeks by leaving one or two empty pens between new arrivals and the other pigs. Never mix new pigs with others, especially "tail-enders." Piglets.

Facilities and equipment should be thoroughly cleaned and disinfected a week or more before the new pigs arrive. Soak floors, walls, feeders, and waterers with sprinkler hoses. Then scrape, brush, or use a high-pressure spray to remove all manure and caked feed. Hot, soapy water and a 2-percent lye solution are excellent for the final cleaning. Rinse and spray with a cresylic acid, iodine, phenol-derivative, or fumigant-type disinfectant. Proper temperature and adequate ventilation are especially important to new arrivals. The ideal temperature is approximately 75°F; however, a warm, dry sleeping area is most critical. In controlled environment buildings, provide

1.8 to 3 square feet of floor space for 20- to 50-pound pigs and 4 to 5 square feet for 50- to 100-pound pigs. If you house pigs in outside lots, provide 3 to 4 square feet of well-bedded sleeping area for each pig.

Sort feeder pigs by weight when they arrive. Weight variation within each pen should be plus or minus 10 to 15 percent of the average weight. Keep group sizes at 25 to 30 pigs per pen to reduce fighting, promote faster growth, and improve efficiency.

Water consumption upon arrival is extremely important. Provide one waterer per 20 pigs. Some pigs may require assistance in learning to drink from a strange watering device. Provide medicated water using in-line proportioners or barrel waterers. Provide one feeder space or hole for every three to four pigs. Avoid feeders with heavy trough lids or narrow feeder spaces that discourage pigs from eating. Fasten lids in the open position for a few days if necessary to promote feed consumption.

Provide a "sick pen" where pigs can be given extra observation, attention, supplemental heat, and reduced pig traffic and activity.

**Feeding The New Arrival**

Nutrition and feed management of the new arrival are important because they influence pig performance and measure pig health and well-being.

During the first 7 to 10 days, it may be advisable to limit-feed the pigs. Allow pigs to consume approximately 90 percent of full feed to reduce gut edema and scouring problems. In 40- to 60-pound pigs, this generally means approximately 2 pounds per head per day. Feeding on a clean floor during the first few days allows closer observation of the pig's appetite and serves to train pigs in proper dunging patterns.

A special receiving diet may reduce nutrition-related health problems. A diet containing high quality, palatable ingredients (whey, fish meal, distiller's dried grains, etc.) and fortified for low intake should be fed for 1 to 2 weeks after arrival. Then switch pigs to a typical 16 percent pig grower diet.

Water is important because it is not available during shipping. Stress-related scours often result in dehydration shortly after arrival. A 40-pound pig should consume about ½ gallon per day. Use palatable water medications and do not limit intake of water. Flavorings (like gelatin) may improve palatability.
Health

Disease in purchased feeder pigs is often the most limiting factor in making a profit. The best way to prevent disease is to purchase feeder pigs from a local, single source. The single source of purchase should be a herd that is free of major diseases and has a preventative herd health program in place.

Purchasing feeder pigs from a single source allows you to know about that herd's disease and management history. Has there been salmonella, erysipelas, dysentery (blood scour), or Actinobacillus (Hemophilus) pleuropneumonia in the herd? If particular disease problems have occurred, you can work with the owner of the source herd to insure that a proper vaccination or medication program is in place to help correct it before you purchase the pigs.

Unless other disease problems have been present in the source herd, the only vaccination that should routinely be given to the pigs before sale is erysipelas. If Actinobacillus (Hemophilus) pleuropneumonia has been present, then it might be necessary to vaccinate for the correct serotype that has been identified.

Pigs should be dewormed and treated for external parasites before purchase. They should also be dewormed 3 to 4 weeks after arrival. If they have not been treated for mange or if they come from a herd with mange problems, treat for mange and lice upon arrival and repeat in about 10 days. Using the injectable product ivermectin will both deworm and treat for most external parasites. Purchase enough feeder pigs to fill an entire building. This will allow you to manage the group for all-in all-out production. Sort the pigs by weight so that there is no more than a 10-pound difference between pigs in a pen. A continuous flow system for purchased feeder pigs is a recipe for continual disease transmission! Pushing too many feeder pigs through your facility will guarantee the occurrence of disease. No amount of antibiotics or vaccinations will prevent or stop disease in such a system. Planning for all-in all-out production will allow the building to be emptied and sanitized between groups and will decrease the chance for disease transmission.

Watching space requirements will pay dividends by reducing stress and disease: no more than 20 to 30 pigs per pen, no more than 100 pigs per room, and no more than 500 pigs per building. Make sure that each pen has at least two waterers that are spaced far enough apart to prevent fighting for space when drinking. Check the flow rates on the waterers; they should fill a 1 quart milk jug in 1 minute. Inadequate feeder space can also be a cause of problems such as fighting and ear biting. The standard recommendation is one feeder space for four pigs.

Purchasing pigs from commingled feeder pig sales is not as desirable from a health standpoint as buying from single source herds. However, with a disease treatment plan in place, you should be able to handle such pigs adequately. In such a case, the use of all-in all-out production becomes even more critical. Empty the building by marketing all the hogs in it and allow time for complete sanitation of the building before moving in a new group of hogs.

It is usually best to medicate either the feed or water of newly arrived feeder pigs for the first 2 weeks. Some veterinarians prefer using the highest allowable amount of feed-grade antibiotics for disease prevention during this period. Following the initial 2 weeks, the concentration of antibiotics in the feed can be reduced for the remainder of the finishing period. "High health," single-source feeder pigs may not need to be continued on antibiotics. The use of water medication is often recommended for groups that are breaking with disease. In these cases, pigs will often continue to drink when they will not eat. If you use water medications, make sure that they do not cause an off flavor that would decrease water intake.

Routinely injecting all newly arrived pigs with antibiotics is not recommended. When pigs get sick, the preferred treatment is to inject them with an appropriate antibiotic at the correct dose. Although this is labor intensive, it is the best method for treatment of acutely ill pigs. Treat for at least 3 consecutive days, marking the pigs so treated with a colored crayon. Early detection of disease will greatly increase the chance of treatment success.

Maintain a sick pen for treated pigs so that they will be separated from the main group and have less competition for feed and water. If sick or injured pigs become "chronics," they may be sold as "roasters" or for barbecue hogs following a proper drug withdrawal time. Do not sort these hogs back into pens with healthy hogs. They can serve as "Typhoid Marys," which spread disease to healthy hogs.

Summary

Getting hogs to market weight takes time, care, and management skill if it is to be done economically and efficiently. With today's markets, producers must make the best possible use of available tools. Providing adequate nutrition and housing while maintaining a good health and marketing plan will result in the best chances to show a profit.

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