

Care and Management of New Feeder Pigs

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Photo Scott Duggan, © Oregon State University
Two pigs looking through door.

People buy feeder pigs (weaned pigs) for home consumption, as 4-H or FFA projects, or to sell as direct-market pork. Weaning, along with moving to a new place, can cause a lot of stress for young pigs. The young pigs need excellent care and management to avoid illness and poor growth. Whether you are raising your own feeder pigs or buying them, follow a few key recommendations to keep your pigs healthy and gaining weight.

In a traditional system, producers raise feeder pigs in indoor housing with a limited outdoor area and on a mainly concentrate (grain) based diet. With the increase in demand for natural and organic pork, many farmers are using a pasture system. No matter which system you choose, young pigs need quality care to keep them healthy and

growing. This publication covers housing, feeding, health, management and marketing for both traditional and free-range systems.

Traditional system

Housing

Before you buy feeder pigs, there are several things that you need to consider. First, prepare the pen before the pigs arrive. A clean, draft-free area is important to keep the animals from becoming stressed after they arrive. Shelter from rain and snow is important if the pen is outside. If the pen has housed hogs before, clean and disinfect it with a product labeled for use in barns that will kill viruses, bacteria and parasites.

The area should provide enough space for all of the pigs you buy. In the winter or early spring, extra heat, bedding, or hovers (see hover side bar) may be necessary to keep them warm. The ideal temperature range for a 50-pound pig is 70°F to 82°F. The optimum range for a pig over 215 pounds is 50°F to 75°F. Feeder pigs can become stressed and ill if they get too cold during the chilly winter and spring nights that are common in Oregon through the month of May.



Photo Melissa Fery, © Oregon State University.
Young pigs do well with dry bedding.

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Bedding, such as floor mats or straw, works well to keep the pigs off of cold surfaces and to conserve heat. Producers often use heat lamps to keep pigs warm, but you must use extreme caution to prevent a fire. Improperly installed heat lamps can cause fires that result in loss of livestock and barns. Heat lamps must be out of reach of pigs and flammable materials. Be aware that pigs can stand up on their hind legs and reach low-hanging heat lamps.



Photo Scott Duggan, © Oregon State University. Quality bedding and a heat lamp help to keep pigs warm and healthy.

Feed

A healthy feeding program requires clean water and a palatable, nutritionally complete feed. Swine are raised on a variety of feeds, from commercial swine rations to diets that use feed by-products (such as bakery waste) or a combination of the two. For example, you can feed young pigs a commercial starter or grower feed and add by-product feeds to the diet as the pigs get older. Other kinds of by-product feeds are cull peas, milk products, distiller's products and nuts (see the hazelnut sidebar).

Average daily gains vary according to the quality of the feed. If you use a by-product feed, know the amount of water it contains. Some by-products

contain high moisture and low dry matter. Dry matter is the amount of feed that is available after the moisture is removed. Dry matter contains the nutrients, such as protein and energy. Young pigs may not be able to eat enough high-moisture feed to get the needed daily nutrient intake. Also, some high-moisture feeds are not worth hauling long distances due to the cost of transportation. For example, a feed that contains 85% water yields only 300 pounds of dry matter per ton.

Concentrate feeds are typically low in fiber and high in energy and protein. A feed containing a grain or grain by-products such as corn and a protein source like soybean meal is considered a concentrate. Self-fed feeders work well for concentrate feeds. Adjust feeders to prevent excess feed waste and still allow sufficient feed flow. Daily hand feeding also works well, but be sure to hand feed pigs at least twice a day at consistent times.

Because of their simple, monogastric stomach, pigs require more concentrates (grain) and less roughage or fiber (hay) than cattle or sheep. This is especially true for young pigs. Most quality commercial starter and grower rations for swine contain no more than 5% crude fiber.

Protein is an important nutrient for growing pigs. See Table 1 (page 3) for recommended levels of crude protein in swine diets. Pigs, because they are monogastric, require higher quality protein than cattle or sheep. The protein should be from highly digestible sources rich in amino acids. Most swine rations for commercial operations are balanced on amino acid content rather than crude protein. Amino acids, called the "building blocks of protein," are important components of swine feeds. For example, soybean meal contains many of the necessary amino acids required for growth. Lysine, one of the more important amino acids necessary for growth, is often added to swine feed to provide adequate levels in the diet. For most small hog operations that purchase feed by the bag, crude protein is still listed

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on the feed tag. It can be used as a starting point for evaluating the quality of the protein.

Table 1. Recommended crude protein levels in swine feeds*

Weight of pig	Recommended % crude protein in diet
10–20 pounds	24
20–45 pounds	21
45–100 pounds	18
100–150 pounds	16
150 pounds and greater	13

**Nutrient Requirements of Swine*. 10th revised edition. 1998. (Note: Later editions of *Nutrient Requirements of Swine* base requirements solely on amino acids and do not contain references to crude protein.)

Energy is also an important component of swine rations. Corn has the highest energy content of any grain, followed by wheat, barley, and finally oats. Whole grains processed into swine feeds provide more energy than grain by-products or grain parts because they contain more starch and less fiber. By-product grains, such as screenings, may contain lower energy due to less starch. In some cases, vegetable fat or oil is added to increase the energy content. Fats and oils typically contain two or more times the energy of corn.

Minerals and vitamins are also important nutrients. The calcium:phosphorus ratio should be 1 to 1 or no more than 1.3 to 1. Too much calcium may interfere with the absorption of phosphorus and trace minerals such as zinc, iron and copper, which are also important. Pigs that are raised without access to forage require A, D, E and the B vitamins. Most commercial swine feeds contain adequate minerals and vitamins, but check the feed bag label to make sure. Be aware that if you store feed for a long time, the vitamins may degrade.

The label or tag on a bag of commercially prepared feed gives important information about the quality and nutrient content of the feed. Look on the tag to determine the following:

- Crude fiber — for young pigs, should be 5% or less
- The % protein of the feed.
- The lysine content of the feed along with any other amino acids. You can add lysine, methionine and other amino acids to the feed

to provide the proper balance of amino acids for the growth stage of the pig. These are usually listed in the ingredients on the feed tag. See Table 2 for recommended lysine levels in nursery, grower and finisher swine rations.

- The protein source of the feed (listed in the ingredients). The protein source should be rich in amino acids. An example is soybean meal. Knowing the type of protein included in the feed will help you figure out the approximate amino acid content if the levels are not listed on the feed tag. Alfalfa or other legume plant protein sources are low in necessary amino acids and may contain too much fiber for the best growth in young pigs.
- The source of energy, such as corn, wheat, barley, or oats (listed in the ingredients). While the energy content of feed is not listed on the tag, you can estimate by knowing the type and form of grain in the feed.
- Mineral and vitamin content.

Table 2. Recommended lysine levels for swine rations for medium lean gain (as fed basis)*

Weight of pig	Recommended % lysine level
10–20 pounds	1.44
20–45 pounds	1.38
45–100 pounds	1.06
100–150 pounds	0.92
150 pounds and greater	0.72

**National Swine Nutrition Guide*. 2010. U.S. Pork Center of Excellence

Pigs on a good-quality diet require about 2.5 to 3 pounds of feed for each pound of gain. Their average gain should be from 1.5 to 2 pounds per day during the whole feeding period.

When buying pigs, be sure to ask the seller what the pigs are being fed at the time of purchase, so that you can duplicate the diet as closely as possible. If you want to change the diet, introduce the new feed gradually to avoid digestive upsets. If diarrhea (scours) becomes a problem, it may help to add 20% ground whole oats into the diet for several weeks. Other remedies to prevent scour problems include adding 10% high-quality alfalfa hay or other fiber to the ration. Make sure there is adequate feeder

space for all pigs and minimize stress from cool temperatures. Always use good sanitation.

Medicated feeds are now restricted by the Veterinary Feed Directive. Antibiotics added to water now require a prescription. Implemented on January 1, 2017, this new regulation requires that antibiotics that are medically important for humans and are used in animal feed or water require a Veterinary Feed Directive or prescription from a veterinarian. A valid veterinarian/client/patient relationship must be in place to receive a Veterinary Feed Directive or a prescription.



Photo Melissa Fery, © Oregon State University.
Healthy, growing pigs.

Health

In addition to scours, respiratory diseases are the major health problem affecting newly purchased pigs. Observe animals daily for any signs of illness or unusual behavior. Some symptoms to watch for are coughing, a rise in body temperature, loss of appetite, lethargy and difficult or rapid breathing. Be ready to act quickly at the first sign of illness. If a pig appears to be sick, use a thermometer to take a rectal temperature. The normal temperature for a pig is 102.5°F (plus or minus 1 degree). Knowing the pig's temperature, a veterinarian is better able to prescribe a course of treatment.

Vaccines raise the animal's resistance to the more common bacteria and viruses that "challenge" the animal and cause disease. A vaccine activates the immune system and increases its available antibodies to fight a particular disease. Second and third vaccinations for the same disease are called **boosters**. Boosters help increase the immunity

level. Boosters are required for many vaccinations to be effective. Follow the vaccine label instructions for the timing of boosters.

A vaccination program is highly recommended to protect your pigs' health. The basic vaccinations for feeder pigs are atrophic rhinitis (bordetella), *actinobacillus pleuropneumoniae* (APP), mycoplasmal pneumonia, and erysipelas. Vaccinate for circovirus type 2 if this has been a problem in the past. Ask the pigs' seller what vaccines have been given and either add more vaccinations or booster them at the correct time. A good practice is to develop a valid veterinarian/client/patient relationship with a veterinarian in your area who knows swine well, to assist with a vaccination program and health emergencies. As mentioned before, this relationship is required in order to receive a Veterinary Feed Directive.

In order to be effective, vaccines must be handled and administered properly. Use the proper needle size for the age of the pig and the type of injection. Give intramuscular injections in the neck just behind and below the ear. Give subcutaneous injections in the loose flaps of skin in the flank or elbow. Injecting medications in other body parts may damage valuable cuts of pork.

It is especially important that show pigs have boosters before a fair or show. It takes 10 to 21 days after vaccination for the pig to develop either a protective or increased immune response. The exact length of time depends on the pig's age, the type of vaccine, and whether the pig has been previously vaccinated for a disease.

Treat pigs for internal and external parasites. In many cases, sanitation, proper feeding and comfortable housing will reduce the potential for serious parasite outbreaks. But, use some type of parasite control to keep the parasite numbers at low levels. Pigs that are infested with worms and lice may look unthrifty and not gain well.

It is important to observe withdrawal periods for all medications. The withdrawal period is the time between the last treatment and slaughter, as listed on the label.

Excessive heat can stress pigs as much as cold weather. As the pigs grow and summer arrives, be sure to provide plenty of cool, clean water, shade, and good ventilation if the pigs are housed inside a building.

Pasture or free-range system

There is a growing interest in pasture-raised pork. This may be a viable alternative to confinement production because costs of housing and equipment are lower, and it may also satisfy the concerns of animal welfare advocates.

A pasture or free-range system can consist of one or a combination of two different feeding systems. Pasture-raised usually means pigs are allowed free range on pasture but are also fed a commercial swine feed. Pasture fed or forage fed pork comes from pigs that are fed or graze a diet almost entirely of forage or vegetables or both.

The term “pasture raised or fed” can be misleading or misunderstood, because pigs usually do not make satisfactory gains on traditional grass pasture. As described in the feed section for traditional systems, pigs are monogastrics, so they need a concentrate diet in order to gain well. Pigs on a forage diet grow more slowly but may have a cheaper feed cost per pound of gain. Evaluate all aspects of the production system to determine the most economical way to feed and house feeder pigs.



Photo Melissa Fery, © Oregon State University.

Pigs raised on pasture may require supplemental feed.

The “Feed” discussion in the “Traditional system” section (page 2) applies to a free-range system as well. Feeders can be positioned on movable platforms or be stationary in a shelter. Clean, fresh water is important, especially during hot weather. Shade is also necessary to avoid heat stress and sunburn.

A forage-fed system is a true swine grazing operation. This may involve some farming to grow forages that pigs desire. Some of the feeds pigs prefer are legumes like alfalfa or clover. Other

favorable feeds are brassicas such as forage rape or kale. Tender cereals, such as oats and barley, are another source. Pumpkins and squash are favorite foods. Older feeder pigs make better use of the previously mentioned forages than young pigs.

The recommended number of growing and finishing pigs per acre ranges from 15 to 34, depending on the size of the pigs and the amount of available forage.

Be sure there is a sturdy fence, such as woven wire or electric netting, to enclose the pasture or foraging area. You can use temporary fences if you want to divide the pasture into smaller plots for rotational grazing. Pigs often root under a woven wire fence, so one or two electric fence wires near the bottom may deter them from digging out. The electric fence wires can be converted to one hot and one ground in the summer as the soil dries up and soil grounding is ineffective.

Parasites may also be a problem with pasture-raised swine. Your veterinarian or Extension professional can recommend procedures to monitor the level of parasitism and the appropriate dewormer (anthelmintics) to use.

Refer to “Health,” page 4, for information on vaccinations and other health recommendations that apply to pasture pork operations as well as traditional systems.

Marketing

If you expect to sell your pigs for meat, you need to develop a marketing plan. Your pigs could be ready for harvest when they are six months old. It is important to find and establish customers long before the harvest date to avoid paying for meat storage while you look for buyers. Your marketing plan should answer these questions:

- How much meat will the harvest produce?
- When will you sell the pork?
- Who will you sell it to?
- What is the price?
- Who will do the processing?

Most small-scale pork producers do farm-direct marketing (selling directly to the customer) because it gives you the most profit. This method requires sales and marketing skills to develop a customer base. Establishing relationships with your customers takes considerable time and effort, but

it is critical for repeat business. See *Farm-direct Marketing: An Overview and Introduction* in “For more information.”

Most available feeder pigs are gilts and castrated males. In some cases, there may be intact males available to buy as feeder pigs. One of the issues with raising intact male pigs is boar taint. This occurs as the male reaches puberty. Boar taint is an unpleasant odor and taste that occurs when pork from sexually mature, intact males is cooked. Customers are likely to find this offensive. A second issue is mixing intact males with females. Pigs can reach puberty by 6 months of age. If a mixed group of pigs is on a feeding program where they are not harvested until they are 6 to 7 months old, there is a chance that some of the females may become pregnant.

To sell meat legally, animals must be harvested, processed and packaged at a USDA inspected facility. If you plan to sell pork by the package, you'll need to get a meat seller's license and adhere to package labeling requirements. Nearly all processing facilities have a waiting list, so be sure to make contact several months before animals are ready for processing.

If your marketing plan includes selling live pigs (“on-the-hoof”), you must give the buyer clear instructions on how to have the animal processed at a state-licensed facility. Walk them through the steps. Your customers need to understand cutting and wrapping fees, make decisions about the cuts they want and the size of packages, and have a general understanding of the amount of meat they will actually put in their freezer (carcass yield).

Raising feeder pigs to market weight might sound like a lot of work and worry, but it also can be fun and rewarding. If you have questions, ask for advice from the Oregon State University Extension Service, a veterinarian experienced in swine health, or an experienced swine producer in your area.

For more information

Publications

- Barry, Sheila, Cole Smith, and Susan Ellsworth. *Outdoor Hog Production — Best Practices for Resource Conservation in the San Francisco Bay Area*. University of California Agriculture and Natural Resources. <http://cestanislaus.ucanr.edu/files/233217.pdf>
- Beef and Pork Whole Animal Buying Guide*. Iowa State University. 2009. <http://ccetompkins.org/resources/beef-and-pork-whole-animal-buying-guide-40pp>
- Lev, Larry. 2016. *Farm-direct Marketing: An Overview and Introduction* (PNW 201). <https://catalog.extension.oregonstate.edu/pnw201>

Websites

- National Pork Board: <http://www.porkboard.org>
- Oregon State University Extension Service Small Farms program. <http://smallfarms.oregonstate.edu/>
- Swine resources: <https://extension.oregonstate.edu/animals-livestock/swine/swine-resources-small-farms>
 - Meat processing rules: <https://extension.oregonstate.edu/search?search=meat+processing+rules>
 - Farm direct marketing: <https://extension.oregonstate.edu/search?search=farm+direct+marketing>

Hazelnuts in swine rations

Feeding acorns to finishing hogs is a popular practice in Italy and Spain. Dry cured pork products (such as prosciutto and coppa) come from pigs that are raised free-range on pasture and acorns. These products sell at premium prices compared to pork from hogs fed conventional diets. Monounsaturated fats and antioxidants in acorns create a stable fat profile in the pork, which is needed for the aging and ripening process of these specialty items. Hazelnuts, similar in fat and antioxidant content to that of acorns, may offer similar benefits.

There is increased interest in adding cull hazelnuts to swine diets in an effort to duplicate the effect of acorns in the finishing period. Another advantage of including hazelnuts comes from the nutritional benefit of oleic acid and the antioxidant α -tocopherol. These have the potential to improve shelf-life and impart a good nutritional profile in pork tissues. Oregon State University conducted a study to explore the effects of different concentrations of cull hazelnuts and their influence on pork shelf-life and fatty acid composition.

Cull hazelnuts (95% kernel, 5% shell) were ground and added to a commercially-sourced hog finishing ration and fed to Berkshire-cross hogs. The treatment groups were:

1. Basal diet (fed commercial pelleted finishing ration with 0% hazelnut composition).
2. 15% of the ration by weight was replaced by hazelnuts.
3. 30% of the ration by weight was replaced by hazelnuts.

Hogs were fed for 42 days and then harvested.

Redness (pork color) values declined during retail display for all treatments, and there were no differences in the rate of decline. Levels of α -tocopherol were 82% and 130% higher in the hazelnut rations compared to 0 hazelnuts. Oleic acid increased approximately 5% in the 15% hazelnut ration and approximately 7% in the 30% hazelnut ration as compared to the base percentage in subcutaneous fat in the 0% hazelnut ration.

This study showed that adding hazelnuts to the finishing diet improved the fatty acid composition of pork nutritionally via increases in oleic acid. Loin chops from hazelnut-fed hogs also experienced significant decreases in lipid oxidation during

retail display compared to loin chops from hogs fed a commercial diet. Researchers attributed the decrease in lipid oxidation to increased concentrations of α -tocopherol found in the hazelnut rations. The increase in α -tocopherol content in muscle was not significant enough to produce discernible effects on shelf-life when evaluated for color and purge loss.



Photo Nathan Parker, © Oregon State University. Cull hazelnuts used in the feed trial.



Photo Nathan Parker, © Oregon State University. Pork loin ribbed at 10th and 11th interface for carcass sampling and evaluation.



Photo Nathan Parker, © Oregon State University. Shelf life analysis of loin chops.

Using hovers in a swine operation

Swine require extra heat during the first few weeks of life. It is important to make sure that even feeder pigs are not subject to cold stress. Baby pigs demand the most heat of any young domestic livestock because they have very little of either insulating fat or brown fat reserves and a sparse haircoat. Newborn pigs have an immediate need for air temperatures of about 95°F for the first three days. Then, drop the temperature to 85°F over the next three weeks. Swine producers usually provide heat using lamps, heating pads, or by forced-air heating the whole room.

Even with the added heat, it's still common to see pigs huddled, piled, and sometimes shivering, even under a heat lamp. This tells you that the pigs are cold and are conserving heat.

Feeder pigs purchased in the fall or winter can suffer from cold stress, especially with cooler nighttime temperatures. It is not uncommon to see 50-pound and larger pigs huddle and pile up when cold. Provide straw or other bedding material to help ease cold stress. You could provide enough heat to increase the temperature in the whole building, but that is expensive.

An economical way to help pigs keep warm is to conserve the heat that's available. This is what a hover does. It conserves heat from bulbs and heat lamps and helps provide a comfortable environment for pigs up to market size.

What is a hover?

A hover is a box-like structure that captures heat and reduces drafts. You can place it in a farrowing pen for baby pigs or a shelter for older pigs. One

side of the hover is open so pigs can get inside. In a sense, it's a warm creep area, but instead of providing feed, it provides a place for the pigs to be warm. The heat for a hover can come from a protected bulb or the pigs themselves.

How does a hover work?

Warm air rises and cold air sinks. Heat from a lamp or body creates an updraft as the warmed air rises. This not only steals warm air away from the sleeping area but also creates a draft. Cold air drawn off the floor replaces rising warm air. A hover acts like a giant reflector, capturing the heat produced by bulbs, bodies or lamps, stopping drafts, and providing a smaller, warm "room."

As they get older, feeder pigs usually generate enough heat to keep themselves warm in a hover without the need for other heat sources. Even so, this may not be the case in cold winter temperatures. Pigs that are close to market weight rarely need extra heat.

How do I build a hover?

The ideal material is durable and easy to clean. Metal meets these criteria but has a low insulation value. Plywood is inexpensive and easy to work with, but it may be difficult to clean.

Experiments at Oregon State University showed that a hover that did not have the entrance side completely open maintained higher temperatures. Try to enclose the hover as much as possible to conserve more heat. A floor in the hover increases its warmth.

A hover is an effective device to capture heat and provide warmth for young pigs. It can be one of the tools you use to provide a healthy environment for feeder pigs. Building hovers doesn't cost—it pays.



Photo J.A. Moore,
© Oregon State University.
Example of a hover in a
pen of weaned pigs.