So you Want to Raise Hogs?

Raising pigs can be a satisfying enterprise. This article provides a broad overview on hog production and important points future pig producers should be aware of.

Raising Hogs for Profit can be a satisfying enterprise. However, there are several management skills that each hog producer should have to be successful. Each livestock enterprise has different resources: land, facilities, labor, capital, feed, and management. To raise hogs sustainably, you must manage these resources.

In addition to managing resources, new producers must ask themselves, what do I need to get started? This question involves considerations for the type of animals a producer wishes to raise as well as where to find these animals, how to select them, and what equipment will be needed for the operation. Producers also need to consider how they will feed their animals and what health care practices they will use to keep the animals healthy. Savvy producers will let markets identify the type of animals they should raise in order to generate a profit. This fact sheet may be used as a guide for hog producers just getting started in the industry to learn:

What it takes to market your animals

- About the different breeds and how to select the right one for your goals
- Where to purchase your animals
- What equipment you'll need to raise your animals
- What to feed and how to care for your animals
- Animal health & working with a vet
- Principles of good housing

What Type of Animals Should I Raise?

The first thing to decide when starting a new pig enterprise is what is your end purpose with your pigs? This decision should directly reflect the markets a producer has available to sell pigs and consider the resources available on your farm and your individual goals with your pigs.

Pigs may be used to produce meat or generate seedstock (breeding animals). The intended markets may dictate what breed or breeds are best suited for the operation. In the end though, nearly all pigs become pork. The markets that differentiate pig production depend on what happens to that pig before it becomes pork. Major markets that occur in the interim of rearing pigs are:

- Reproductive herds, which tend to focus on proliferating specific characteristics of a given breed or for creating pigs that are raised directly for pork. Sows and boars are typically sold for sausage at the end of their reproductive life.
- Nursery operations, which focus on rearing pigs from weaning of pigs until the 'feeder' stage, typically 40-80 lbs. These pigs are then sold to a 3rd operation to be reared for pork.
- Finishing operations, which focus on rearing pigs for pork from the feeder stage.

Of course, pig producers may rear pigs in all of these stages or in any combination of the stages. Regardless of the stage of production in which you hope to rear pigs, it is advantageous for producers to start by determining if they wish to raise purebred or commercial stock. A purebred operation typically raises animals of one breed or with the intention to keep breeds 'pure' to a historical breed standard. Often a purebred operation will have all registered animals that can also be sold through purebred sales. A commercial operation may have unregistered purebred animals, or they may have crossbred animals. Crossbred animals have the benefit of hybrid vigor, which is simply the ability of crossbred offspring to increase...
in productivity over the average of the breeds that were part of the cross. Crossbred pigs are very popular for pork production and are very commonly and easily found in the feeder and finishing pig markets.

**Marketing**

Several markets are available for hogs. When choosing a market, you must decide whether your operation will focus on selling live animals or marketing meat. Many independent pig producers in the eastern United States focus on marketing of their hogs as freezer or retail cuts directly to the consumers due to access to markets with dense populations and open markets. Alternatively, many larger producers may focus on selling finished pigs to a large meat packer who acts as the broker of pork to the consumer through grocery stores, restaurants, or food service companies.

Keep in mind that Pennsylvania state laws prohibit the retail sale of meat unless the animal was processed in a USDA inspected facility. Producers often sell live animals to a customer, where the customer is then responsible for planning to have the hog processed. The terms of such an arrangement are individual to the producer and the customer, but the ease of such an arrangement makes it the most popular options for producers to sell pigs in large groups or on an individual customer basis. This arrangement allows greater flexibility to the buyer for where and how they want their pigs processed.

Other options for hogs include marketing breeding stock, feeder pigs sold to a grower, or market animals for junior shows. Breeding stock are typically purebred animals and may be marketed directly from the farm and through a registered sale. Work with your local extension educator to determine the best markets for your operation.

**Selecting a Breed**

Each pig breed has different traits for which they are recognized. Breed associations can provide information on those traits and help you narrow your decision regarding what breed or breed combination fit best with your operation.

Pig breeds are often divided into maternal (dam, sow) and terminal (sire, boar) breeds. Maternal breeds are typically large framed and recognized for their ability to raise large litters of healthy wean piglets to weaning. Terminal breeds generally grow faster and leaner than maternal breeds as they are commonly selected for meat production and growth efficiency. In the United States, it is also common to seek breeds that are not directly classified as maternal or terminal types. These breeds are typically known for very specific traits and are prized for their novelty. These breeds can be classified as specialty breeds, though their unique characteristics vary significantly.

**Maternal**
- Landrace
- Yorkshire

**Terminal**
- Duroc
- Pietrain
- Hampshire
- Poland
- Spotted Pig (spots)

**Specialty**
- Berkshire
- Choctaw
- Idaho Pasture Pig
- Mangalista
- Tamworth

In many cases, it is advantageous to combine the genetics of the maternal and terminal breeds for specific environments or markets. Pig producers who combine the traditional maternal and terminal breeds to create a pig with both traits refer to this practice as ‘crossbreeding’. Common slang to refer to pigs produced from these pairings are ‘cross-bred’ pigs. Crossbreeding of pigs is so common, it is difficult to find pigs of a pure breed background without working with a pig producer who specifically works to maintain the characteristics of a specific breed.

Some examples of pig breeds include:

Duroc (nursery pig)

Yorkshire (sow)
Where Can I Purchase Animals?

Livestock can be purchased through several different means. Many sales are held across the country throughout the year and may offer only one breed, a variety of breeds, or crossbred pigs for sale. Another option would be to locate reputable breeders and purchase directly from their farm. A wide variety of livestock may be available at a local auction barn; however, let the buyer beware. Hogs sold through this venue are at greater risk of health issues and will require special handling when you return home to your existing herd.

Regardless of purchasing venue, careful selection of stock is important. Have a plan of what you need in your pigs before heading to the auction barn, show, or breeder to select your animals. If you are looking to improve particular traits in your herd, choose animals that are strong in those traits for breeding. Typically, good quality boars have a greater impact on the herd, having the ability to influence genetics over a greater number of offspring in the same year. A good quality sow, however, should never be regarded as unnecessary. Good maternal genetics are the foundation for any quality breeding herd. It is particularly advantageous to select gilts and sows of long body and sound feed and legs, able to farrow with minimal assistance, and capable of producing a litter at least 2 times per year.

Selection Principles

There are two methods to select livestock: individual performance records and visual appraisal. Animals should first be selected on performance (e.g., how much pigs weigh at weaning or time it takes to reach market weight), and then the higher-performing animals should be evaluated visually.

Performance selection principles evaluate measurable traits such as litter size, birth weight, weaning weight, average daily gain, or meat yield and quality. Producers who evaluate growth traits should adjust weaning weights to account for the sex of the pig, birth weight, age at weaning and weight, and average daily gain to market. Utilizing some key data and formulas can help producers evaluate growth traits. Commercial producers should utilize performance data when selecting a new boar or selecting semen for their breeding herd. Both the desirable performance of the boar, and the ability of the sow to birth and raise offspring are critical for a yielding a successful litter.

Visual animal appraisal evaluates aspects such as structural correctness, muscling, body capacity, and breed character. Structural correctness in pigs is highlighted by the ability of your livestock to move smoothly around their holding area, to rise and lay down without difficulty, and to perform your growth or reproductive objectives with little or no difficulty. Evaluating structural correctness allows producers to identify animals with defects that are not apparent through performance evaluation. Structural correctness should also be evaluated with housing considerations in mind. Sows reared in poor footing conditions, such as rocky soils, perpetually wet soils, or pitted paddocks, are dependent on heavier bones and
sturdier feet and legs to rear a litter and get to food/water when conditions are less than ideal.

**Facilities and Equipment Needs**

After the appropriate animals are chosen for the operation, the equipment necessary to maintain those animals must be gathered. Hog facilities need a variety of structure and some equipment. Basic facility needs include feeders, watering systems, housing, and health care equipment. Because safety is a concern when managing these large animals, hog operations should also have equipment for handling pigs safely.

**Housing**

When caring for livestock, housing should always be a consideration. Housing needs vary across species, however for pigs raised in seasonal climates, housing is a must. Pigs have a narrow thermal neutral zone, meaning they thrive and grow best under a narrow temperature range. Unlike sheep, goats, and cattle, pigs do not have a rumen to provide intense internal heat or a layer of dense hair or wool to act as outer insulation. In the summer, pigs can become sunburned or can easily overheat without shade.

Housing recommendations vary for the age, size, and weight of the pigs you intend to raise. Mature reproductive stock can handle cooler temperatures, but become heat-stressed more easily; young pigs are very easily chilled, even at seemingly mild temperatures. Finally, excessively wet conditions can lead to issues with land destruction by pigs and increase health-related productivity problems in your herd. When considering housing for pigs, first evaluate the climate that you are in, the location on your farm, and the size and number of pigs you wish to rear.

**Pasture Systems**

Pasture markets for hogs are growing in popularity. Pasture is an ideal housing situation for ruminant animals and equids. Pigs, however, can be destructive to pastures if poorly managed. If you are planning to allow pigs access to pasture for your market, be sure to keep some considerations in mind.

- Feeding pigs a complete and full diet is a must to protecting pastures. -- A pig is not a ruminant animal; therefore, they do not have the digestive system to utilize forage as a primary food source. -- Pigs that are underfed are more likely to be extremely destructive to soils as they search for more food.

- Pigs will build a wallow or nesting area. Soils that are wet are more likely to be rooted up for wallows, while nesting areas tend to be formed in dry, bare soils or in forested spaces.

- Fence lines must be strong. Pigs can be trained to an electric fence however a strong and reliable woven exterior fence is strongly encouraged. Loose pigs contribute to feral hog populations and federal USDA laws outline strict ramifications for loose pigs.
**Water**

Water is possibly the most important nutrient because it impacts feed consumption. Poor-quality water or not enough water can decrease feed intake and result in decreased animal performance. Many different styles of watering systems are available. The key is that water should be fresh, clean, and available at all times.

Many producers choose to install watering systems that can be accessed throughout housing or a pasture system to reduce the labor of hauling water. Depending on the system and region, it may be necessary to access electricity to heat waterers in cold months. When housing pigs, water is an advantageous tool for training, as pigs will tend to manure in wet areas and rest in dry areas. In pastures, pigs will tend to wallow near water sources. Tubs and buckets are strongly discouraged for providing pigs water, as pigs are curious animals and will sooner dump a tub or bucket, rather than save the water for meeting their hydration needs throughout the day.

**Feeders**

Feeders should be used to prevent pigs from eating off the ground. Well-designed feeders will also reduce feed waste on the ground. There are potential health concerns when pigs eat off the ground, including higher risk of excessive parasitic infections. Finally, feed costs represent approximately 60-80% of any hog operation and, as such, high quality feeders and managing feed waste is a driving factor for managing costs.

Many different sizes and styles of feeders are available for hogs. Producers should be sure that all animals have access to the feeder if feeding at specified time frames. If animals have free-choice access to the feeders throughout the day, smaller feeders can be used. Generally, it is recommended that each pig needs 12-14 linear inches (35.5 cm) of feeder space per finishing pig, each space can serve approximately 3 finishing pigs at a free-choice feeder. This recommendation can vary with pen space, stocking density, and housing design.

Fence line-style feeders allow producers access on one side to place feed and grain into the feeder while animals access their feed on the other side. Mobile circle feeders and sled feeders are popular for pigs reared outdoors. Particularly for pigs reared outside, covers for the feed openings are encouraged to keep feed fresh and dry.
Health Care Equipment

Routine health care employs practices to prevent disease. Common practices include vaccinating, castrating, teeth clipping, tusk removal, and deworming. These practices require basic equipment such as syringes, needles, and scalpels.

Hoof trimming is not considered routinely necessary in most hog operations. Hoof trimming might be needed on a reproductive operation, to care for boar and sow feet and prevent lameness. Most hogs must be put in a tilt table to have their hooves trimmed for the safety of both the trimmer and the animal. Therefore, many hog producers will contact a professional should hoof care be necessary.

Teeth clipping and tusk removal are unique procedures to pigs. Teeth clipping is often practiced in newborn pigs to prevent damage to the sows' udder during nursing and to minimize damage to each other when piglets fight. Tusks are typically removed from older boars. Tusk removal should be done by a veterinarian or other trained individual.

Other Types of Equipment

Various other equipment may be used by hog operations to allow producers to handle or manage animals more efficiently. Some of this equipment can include sorting boards, rattles, chutes, snares, scales, and marking paint or spray. This type of equipment is used to handle animals individually from a group. It is easy to get large groups of pigs from just a few sows, but individual animal care or individual animal handling are often necessary to provide veterinary interventions or to send individual animals to market. Additionally, while pigs are very trainable, they are almost impossible to handle with a halter due to their head shape. It is far easier to move a pig with a sorting board or to hold a pig for health checks and procedures with a snare. While the pig might complain, these tools are very effective and offer no harm to the animal when used correctly.

Scales are useful to producers to monitor animal growth performance throughout the growing phase. Three types of scales are often used by livestock producers: beam, dial, and digital. Regardless of the type of scale you wish to use, be sure that it is calibrated and test the accuracy of your scale routinely before using it.
Reproduction and Breeding

Gestation length for hogs is around 115 days, often just a day or two longer with sows that farrow large litters (over 12 or more pigs routinely). Pigs will have an estrous cycle throughout the year. However, in small sow herds, managing a defined breeding ‘batch’ will help improve the efficiency of the sow herd and marketability of the pigs. Many smaller many operations breed sows to farrow in either the early spring or early fall. If you have a small operation and no resources to keep young pigs indoors, it is strongly discouraged to have a litter of pigs from November through January when they might have to be weaned to cold facilities. If you have heated or well insulated farrowing and wean pig facilities, then farrowing can happen all year long with reduced chance of piglets experiencing deathly chill or getting crushed.

Managing a reproductive herd takes a solid understanding of the estrous cycle. The estrous cycle does vary slightly among breeds and ages of pigs; however, it is safe to follow a routine on a calendar until you observe your specific pig’s behaviors. Most sows will complete an estrous cycle every 18-21 days, with ovulation considered day 0 of the cycle. Gilts, or young females that have not yet farrowed a litter, will reach puberty at a varying age, but most gilts will have reached puberty by 6 months of age and are capable of breeding by 7 months of age. Before entering into managing a breeding herd, it is strongly encouraged that producers spend some additional time understanding the estrous cycle and the details of sow and early pig care.

Signs of Impending Farrowing

As a sow nears her time to give birth, she exhibits several signs that the birthing process will begin. A day or two before farrowing, the udder will begin to tighten. This tightening is the udder filling with colostrum. Colostrum is the first milk, and it contains antibodies that help protect newborn pigs from disease. In the hours prior to farrowing, the sow’s vulva will swell and become brighter in color. She will become restless and exhibit nesting behaviors.

In many species, a water bag will appear before the dam begins to push out the offspring. In pigs, no water bag appears. Rather, fluid will be expelled throughout the farrowing process as each piglet ruptures and parts with its individual placenta. This makes prediction of pig arrival difficult, and in most cases, farrowing is not considered to have started until the first piglet appears. Due to this, producers should check on sows at least 1 time per hour when waiting on piglets to arrive. A sow that is visibly pushing with no sign of a piglet for an hour or more should receive obstetrical assistance to investigate the progress of farrowing.

Once farrowing has started, piglets are commonly delivered every 20 minutes or so; the early and later stages of farrowing may take longer. Sows also will not seek out and attend to each individual piglet like a cow or goat might with their offspring. Rather, the sow will attend to her litter as a group by calling them to her side to nurse. Piglets will also seek the sow from this call and from the heat she gives off. Piglets are quite small and this drive to seek heat can be dangerous for them. Crushing of piglets by the sow is a common cause of death in a new litter. Again, attentive care and the right facilities for farrowing will assist producers in managing their farrowing sows and litter. It is highly recommended to work with an experienced producer during farrowing before new producers start this venture on their own.

Feeding and Nutrition

All animals require water, protein, carbohydrates, and fats (to provide energy), vitamins, and minerals in their daily diet. These may come from a variety of sources but should be balanced to meet nutritional requirements. Nutrient requirements change throughout an animal's lifetime and reflect its stage of production: growth, maintenance, breeding, pregnancy, or lactation (milk production).

Pigs require a complete mixed ration to ensure they receive the needed nutritional profile for growth and development. This is for a number of reasons, such as sorting behaviors, inability to process foods in all forms, and quality of offered feed sources.

Sorting behaviors in pigs means pigs will sort out feeds they do not like. If pigs are offered multiple food types to complete their nutritional profile, they will favor some foods over others. This means they will not consume a nutritionally balanced profile. The best way to ensure pigs are consuming a complete nutritional profile is to offer a completely mixed ration in the form of a meal, pellets, or slurry that prevents them from sorting out some ingredients over others. These complete mixed rations should have adequate protein content as well as a balanced amino acid profile. Rations should also contain all the necessary energy, fiber, and micronutrients (vitamins and minerals) pigs need for the day. Keep in mind that protein, fiber, energy, and micronutrient need for pigs vary by stage of production and age. The same diet that is used for just weaned pigs should not be used for maintaining breeding boars and sows.

Once pigs have received a complete ration, they can be supplemented with additional feedstuffs for satiety if needed. This is most useful in maintaining breeding stock. Mature sows and boars can benefit from straw or hay to chew between feedings. Finishing pigs placed out on pasture can benefit from rooting up planted tubers in the pasture. These supplemental ‘feeds’ have reduced digestibility for pigs. This means they can and will consume them, however, their ability to digest these feedstuffs and gain nutritional value from them is extremely limited. Young pigs should not be offered high fiber sources of feed stuffs as this only provides gut fill and prevents them from consuming the amount of feed necessary to meet growth and development requirements.
Health Issues

Health issues on pig farms depend on the environment pigs are reared in, ranging from exposure to soil pathogens and weather-induced stress all the way through nutrition and biosecurity-based health issues. Across all farms, pig care should focus on reducing animal exposure to high pathogen loads and novel pathogens and to care for pigs in a manner that optimizes their growth and performance, rather than impeding it. To do this, there are 3 key focuses for pig producers to keep watch on animal health and care.

1. Establish a working relationship with your local veterinarian. All producers should form a relationship with a veterinarian. This veterinary-client-patient relationship allows the veterinarian to become familiar with your farm management practices and your animals and to more quickly address any health issues within your herd.

2. Implementing biosecurity practices can help keep diseases off the farm. Any new animal that arrives at the farm—and animals that leave the farm and return—should be quarantined from other animals for three to four weeks. In addition, changing shoes and clothing after visiting locations where you had contact with other pigs can help prevent bringing diseases to your farm. Visitors to the farm should be asked to either disinfect their shoes or wear plastic disposable boots.

3. Keep records of daily monitoring of animal body condition and behavior. Pigs will let you know when they are sick; they change physically and behave differently. These signs, however, are often subtle at first. Keeping records of progressive changes in your pigs' physical condition and behavior allows you to keep track of how long they have been changing and when they may have gotten ill.

These 3 key focuses on farm can help producers focus the activities on their farm and more efficiently work with their veterinarian or other pig experts to troubleshoot the source of any illnesses that do occur on the farm.

Internal and External Parasites

Hogs reared outdoors are highly susceptible to parasitic infections. This is a multi-layered issue that typically requires producers to address the problems with routine treatment with broad-spectrum antiparasitics. Pigs reared indoors in environments that prevent build-up of manure have relatively low issues with parasites. In these cases, treatment with antiparasitic agents can be applied, as necessary. As with the above recommendations, work with your veterinarian to choose the appropriate medications for your situation.

Conclusion

Raising hogs can be a rewarding farming enterprise. Very few hog operations are identical to one another, allowing producers a variety of opportunities to develop a program that uniquely suits their lifestyle and farming enterprise. This brief introduction just touches on a few of the aspects to think about when considering a hog enterprise. Before beginning your own enterprise, seek the advice of your extension educator or experienced hog producers in your area.

Many opportunities exist for hog producers. This publication covers basic concepts related to raising these animals. new and beginning producers should seek further information on not only basic production practices, but also nutrition, reproduction, and health in order to produce high-quality, healthy animals. For more information about pigs, visit Penn State Extension’s Swine webpage.

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