



# Swine Fact Sheet

## Animal Sciences

### Auburn University



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## Producing Pork on a Small Scale: Facilities

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Size of facilities and the production schedule are closely related. If swine facilities are already available, then a good production schedule will make efficient use of the buildings, lots or pastures. If facilities are to be constructed or remodeled to fit a desired production schedule, the efficient planning of space required may save many dollars. If facilities are properly planned there will be an orderly flow of animals to allow for cleanup and possibly disinfection. This all-in, all-out movement is one of the most critical keys to good sanitation, herd health and success in the hog business.

The size of any hog facility, whether it is a farrowing house or a dry lot for finishing hogs, depends on how many groups of hogs will be housed there at any one time. Also the size of the group is critical. The small hog farmer will generally be farrowing only one group of sows at a time with no overlap.

### Indoors or Outdoors

There is much debate over whether pigs should be raised inside or out. Indoor production is often considered "confinement" and outdoor production "pasture". All domestic pork production is some form of confinement production. We confine pigs to a specific space. As the degree of confinement increases, more pressure is on the farmer to meet the basic needs of food, water and shelter.

Indoor production confines animals to a building, or pen within a building. The building may be environmentally controlled, open or curtain sided, a hoop building or a portable pen. Flooring ranges from concrete slats to solid concrete to dirt. An environmentally controlled building with a slatted floor requires less labor to care for the animals, but is difficult to justify economically for small numbers. Storage and treatment of liquid manure is also a problem. An open or curtain-sided building with solid concrete floors will be more labor intensive due to manure removal and the need for bedding during cold weather. Buildings with dirt require some type of bedding to collect and hold manure until removal.

Regardless of the building or flooring, you must meet the animals' needs with little or no affect on the environment. Any facility that houses livestock for 45 days or more in any 12-month period in a space that does not maintain vegetative growth during a normal

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growing season is an Animal Feeding Operation (AFO). The Alabama Department of Environmental Management Field Operations Division's Water Quality Program, Chapter 335-6-7 (more commonly known as the Alabama AFO/CAFO rule) covers all AFOs.

Outdoor production was once the standard for production in Alabama. Pigs and sows were kept on some type of pasture, using trees for shade and creeks/streams for water. Pasture production is still an option for small producers. If you own the land, pasture production requires less initial capital than indoor production, and there may even be a marketing advantage. Raising pigs on pasture requires fences capable of keeping pigs in and predators out, and shelter from the elements (sun, wind, rain). While pigs will eat some forages, you will still need to provide a balanced diet.

### Farrowing

From the example production schedule below, it can be seen that sows in group A should be farrowed beginning on day 1. All sows are weaned on day 39 and pigs may be left in the farrowing area for a few days or moved directly to a nursery area. The farrowing area may be empty from day 39 until the next group of sows group B come in and begins to farrow at about day 53. Therefore, from the schedule we determine that one farrowing area will be needed. There is no overlap of sow groups.

### Three group schedule

The number of crates or A-frame huts needed for farrowing depends on the planned number of sows in each group. With high investment facilities, it is very important to work toward filling each farrowing crate each time. For the small farmer with minimal fixed costs per sow, it is often possible to have extra farrowing space for the times when more sows conceive than expected. However even the small farmer should plan for optimal use of facilities. If 10 farrowing crates are available, he/she should plan to fill them with bred sows. This involves estimating the percentage of sows serviced that will become pregnant (conception rate) or that will eventually farrow (farrowing rate). If the farrowing rate expected is 80-85%, then 12 sows (and/or gilts) should be serviced by the boar to hopefully fill the 10 farrowing crates.

With more complex production schedules, there may be more than one group of sows being farrowed and nursed at one time. Groups overlap and require multiple farrowing areas. One of the more popular examples is the seven group system where a group of sows is farrowed every three weeks in one of two separate farrowing areas.

### Nursery

Pigs are weaned as a group on the day determined by the schedule. The nursery may be a clean shed, bedded with straw or a raised-deck nursery building. The size of the facility depends on the number of farrowing groups of pigs to be housed at one time and the expected number of pigs per group.

In the three group schedule pigs weaned from group A sows on day 39 will be removed from the nursery area to the finisher area on about day 84. Since pigs from group B are not weaned until day 91, only one group of pigs is housed in the nursery area at one time. There is approximately a one week break between groups for cleanup.

Nursery facilities should be large enough to comfortably handle the largest group of pigs expected to be weaned. If 10 sows are weaned averaging 8.5 pigs each, then space should be allowed for 85 weaned pigs.

With some production schedules there may be more than one group of weaned pigs in the nursery at one time. If so, it is important to keep them physically separate so that disease organisms are not readily spread from one group to the next.

### Finishing

Growing-finishing pigs normally considered to be those from 40-50 lb to market weight. Completing this 170-180 lb weight gain may take 90 to 120 days. If hogs take longer to reach market weight, more facility space may be needed. Incoming pigs from the nursery area determine when market hogs must move out of the finisher area.

In the three group example we have used, pigs from group A would be moved from the nursery to the finisher on day 84 and would be marketed by approximately 180 days. During this period of time pigs from group B would also be moved to the finisher area. Only two groups of pigs would be housed in the finisher area at any one time.

### Gestation

The facility size required to house sows during breeding and gestation depends on the production schedule. In the case of our example, all three groups of sows will require space in the breeding-gestation area. With other schedules, one or more groups might be housed in the farrowing area until weaning when pen space is available in the breeding area. Careful planning may reduce the space required for dry sows thereby reducing costs.

Sows should be housed closely together to improve the ease of locating them for pregnancy checking, vaccinating, deworming and other management practices.

If the size of swine facilities is closely coordinated with the production schedule, management will be improved, costs will be reduced and the overall operation will run more smoothly.

### Layout of Facilities

Proper layouts of buildings or pastures can reduce labor, improve the environment in buildings, reduce stress on animals, reduce disease, parasites and waste problems and prevent odor nuisance.

The physical layout of buildings or pastures should be such that animals are easily moved through the production schedule without undue labor or stress on the animals. Take into consideration the logical flow of sows from gestation pens or pastures to farrowing areas to breeding areas and back to gestation. Minimize the distances that sows have to

travel and set up driving lanes to facilitate movement. Make certain that boars are housed near gilts and sows that are to be bred or have recently been bred.

Since the farrowing, nursery and breeding areas are where most of the work takes place, these areas should be readily accessible to the producer. However, these are also the areas where disease introduction can be most devastating. Make plans to limit traffic in these areas. If the buildings or pastures are laid out in a logical manner, the daily route of the manager and laborers should be from the farrowing areas to nursery to breeding and lastly to finishing areas. This traffic pattern may help prevent contamination of sensitive areas (farrowing & nursery) from manure picked up in less critical areas (finishing).

### Building orientation

All buildings, whether enclosed or open sided, should be laid out with the long axis of the structure running east to west. This minimizes heat gain during warm months and maximizes cross ventilation in most areas. Buildings laid out in this fashion will generally be more comfortable for hogs resulting in better animal performance.

Open sided or curtain sided facilities will stay drier due to natural ventilation and will have more winter time solar heating on the south side. Over hanging eaves on the north side can eliminate direct sunlight in the summer months.

If two or more buildings are to be placed side-by-side or parallel to each other, provide a very minimum of 40-50 feet between the structures to improve natural air flow. Placing buildings closer together results in damp, stuffy environments and over heating during warm months.

### Drainage and air flow

Placing buildings and pastures on the south side of a gently sloping hill will improve drainage and provide optimum natural air flow. The slope will help keep open lots dry to reduce diseases and parasites or will make drainage of wastes into lagoons or settling basins much simpler. The crest of the hill on the northside of hog facilities may help block cold north winds while capturing uphill southern drafts to cool hogs and push odors aloft.

### Neighbors and odor problems

Sensible planning of hog operation can help prevent many problems associated with odors from hogs and wastes. If lagoons are constructed, local and state law dictate the minimum distance to neighboring residences. Quite often hogs that are out of sight of neighbors are also out of mind. Fewer complaints are likely. Rows of trees or other obstructions may serve as a partial barrier to push hog odors aloft thus dispersing and diluting their effects.

Hogs should never be allowed access to springs, creeks or rivers where pollution can become a downstream hazard. This riles neighbors as well as sportsmen and may cause significant harm to wildlife and fish.

The proper layout of swine buildings and pastures is basically a matter of common sense. However there are many mistakes made by producers that cost them thousands of dollars in reduced production.