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SWINE CONFINEMENT BREEDING FACILITIES

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REVISED:

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Introduction

The increased movement of swine production into confinement in recent years has led to a greater fixed production cost per pig. To minimize these fixed costs, producers need to maximize sow reproductive efficiency. This has dictated the use of planned farrowing schedules, hand mating practices and specialized breeding facilities. Swine breeding facilities offer the producer an opportunity to improve breeding herd performance by providing physical conditions which aid in controlled mating practices.

Animal Movement

Animal movement has been one of the major considerations in designing breeding facilities. However, most producers have developed methods of moving sows which will maximize their labor efficiency. Much of the difficulty in moving an individual sow out of a group in a pen is the physical movement of the gates. Some operators have indicated that the time of day has an influence on the speed of moving their animals, with sows being more lethargic during late afternoon breedings.

Boar movement in a confined breeding facility is less of a problem than sow movement. This is partially because the boar is moved less often, and also because the boars become accustomed to the system and are ready to move at the prescribed time. Obviously, younger boars initially will require more time to move to and from breeding areas.

Facilities

The following descriptions are of swine breeding facilities currently being used in Kentucky.

Breeding building A is used on a swine farrow-to-finish operation which contains 300 sows farrowing on a four-week schedule. The breeding building contains stalls for the sows and pens for the boars, and

uses a pen arrangement for breeding (Figure 1). Forty front-opening stalls, four boar pens housing two boars each, and four breeding pens are available. The barn is 28 feet wide and 72 feet long.

In this facility, the operator dusts the concrete floor of each breeding pen with lime prior to

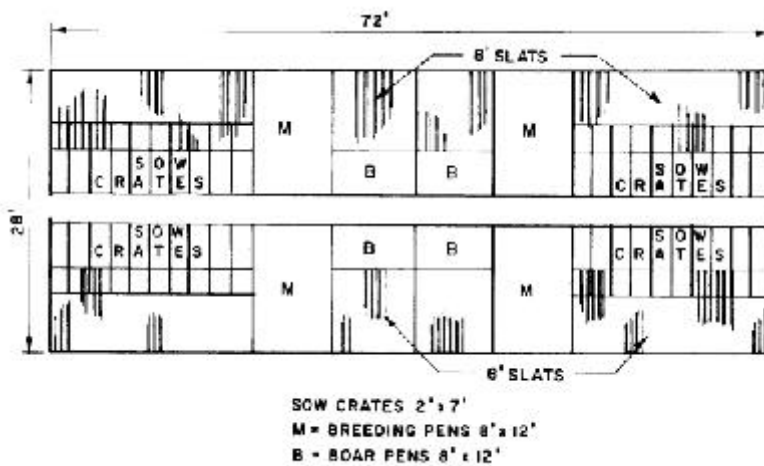


Figure 1.—Building A

the breeding operation to assure that the pen was dry and provided good footing. Boars then are moved to each of the four breeding pens, and sows are driven individually from their stall to a breeding pen. After breeding, sows are removed from the breeding pens and returned to the rear aisle where they are held until time is available to return them to their stall. During the breeding operation, the operator assists any boar once he mounts. After completing a single mating, the boar is removed from the breeding pen and returned to his pen. A new boar is then moved into the breeding area. This arrangement allows one individual to be heat-checking or breeding four sows at one time. The majority of the time is spent physically moving the sows from the stalls to the breeding pens. However, the actual movement takes place rapidly and there is no hesitation in the sows, even those which were in estrus. Some difficulty has been encountered with the breeding pen arrangement in keeping the boar in the pen when moving in a new sow. Even so, the system has operated smoothly, with one individual normally able to handle three breeding pens at one time. This breeding arrangement and operating procedure allows sows to be heat-checked and bred at the rate of approximately five

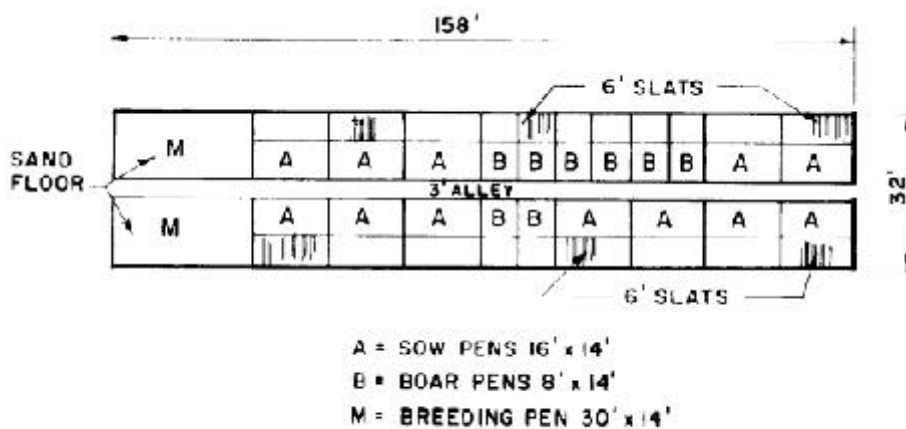


Figure 2.—Building B

minutes per sow with one individual.

Breeding building B uses pens for both sows and boars and separate breeding pens with sand floors. This arrangement allows sows and boars to be moved as groups to the breeding area (Figure 2). This farrow-to-finish operation breeds a

group of 35 sows every two weeks.

The manager of this building moves a pen of four to six sows to a breeding area and then a pen of two to three boars to the same area. One to three individuals are available during the breeding operation to assist boars and move sows and boars out of the breeding area after a mating has occurred. After all three of the boars have mated, a new group of boars will be exposed to that same sow group. After adequate exposure of the sows to the boars, the sows are removed as a group from the breeding area and taken back to their pen. A new group of sows will then be introduced to the boars remaining in the breeding area. Using a large breeding pen and hand mating allows a large number of sows to be exposed to boars in a short period of time.

The building contains adequate pens to house post-weaned sows, the boars and the gilts pool.

Additional pens are provided which allow sows that have been mated once to be sorted out from those which have already been mated twice and those not yet mated. This system requires an average of two minutes per sow with two individuals.

Breeding building C uses a combination of sow and boar pens with the concrete center aisle being used for the actual mating. Boars are maintained as a group in pens, as are sows. There is enough space

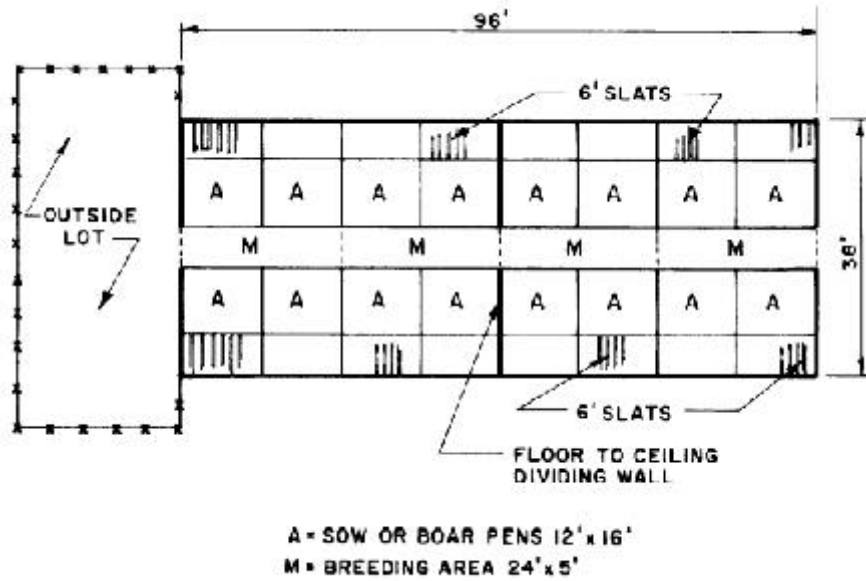


Figure 3.—Building C

center aisle of the building where the breedings will occur. Up to four pens are formed in the aisle while mating is occurring. Sows are moved individually from the outside lot to the breeding area for heat checking. This arrangement provides a convenient method for moving and resorting sows back to the pens after heat-checking or mating. The combination of moving sows out to a holding lot and using separate breeding areas, which are confined to the center aisle, slows the breeding operation, but improves the monitoring and regroupings of the animals.

The operator might be able to improve this building's efficiency by moving the sows directly from the pens to the breeding area, which is in the center aisle, and then returning them to a pen after heat-checking or mating.

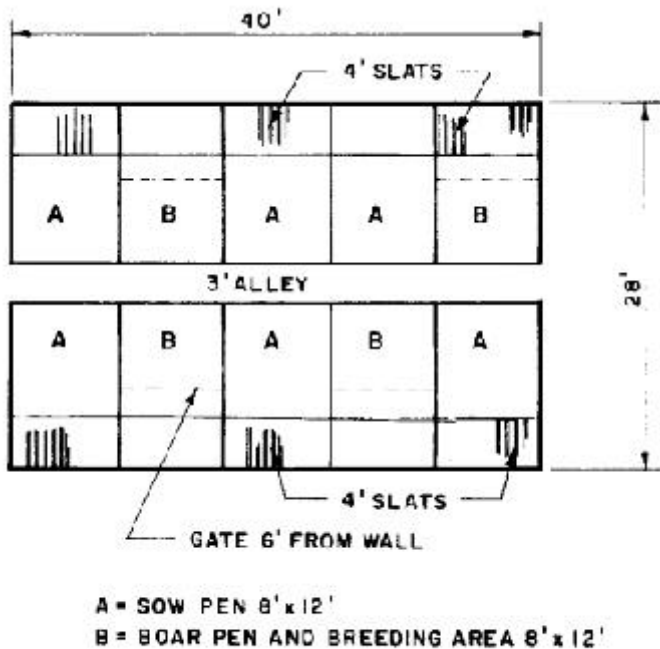


Figure 4.—Building D

available to separate during breeding the sows mated once and those mated twice (Figure 3). This building also uses an outside lot to hold sows during the breeding process to speed sow movement through the building. Thirty-four sows are bred every 30 days in this facility.

The manager of this facility removes all the sows to be checked from the building to the outside lot. Boars are then removed from their pens and placed in the center aisle of the building where the breedings will occur.

Up to four pens are formed in the aisle while mating is occurring. Sows are moved individually from the outside lot to the breeding area for heat checking. This arrangement provides a convenient method for moving and resorting sows back to the pens after heat-checking or mating. The combination of moving sows out to a holding lot and using separate breeding areas, which are confined to the center aisle, slows the breeding operation, but improves the monitoring and regroupings of the animals.

The operator might be able to improve this building's efficiency by moving the sows directly from the pens to the breeding area, which is in the center aisle, and then returning them to a pen after heat-checking or mating.

However, this would increase the amount of operator observation in making sure that all sows have been exposed. It would also require more time to extract a specific sow from a group of sows within a pen. Breeding building D uses pens for sows and boars. Gates in the boar pens hold the animals to the back of their pens to use the solid concrete in the front portion as a breeding area. This allows the pens to be used for both breeding and housing of the boars (Figure 4). This is a totally enclosed, environmentally-controlled facility with evaporative pad cooling. The floor is a combination of partial slats with solid concrete. Thirty-five sows are bred every

30 days in this facility. The manager of this facility removes all the sows to be checked from the building to the outside lot. Boars are then removed from their pens and placed in the center aisle of the building where the breedings will occur. Up to four pens are formed in the aisle while mating is occurring. Sows are moved individually from the outside lot to the breeding area for heat checking. This arrangement provides a convenient method for moving and resorting sows back to the pens after heat-checking or mating. The combination of moving sows out to a holding lot and using separate breeding areas, which are confined to the center aisle, slows the breeding operation, but improves the monitoring and regroupings of the animals.

three weeks in the facility.

The manager of this facility has four breeding areas available for use at one time. A boar is removed from its confinement area in the back of the pen to the breeding area, and sows are then individually moved from their pens to each of the breeding areas. To improve the efficiency of the operation, the manager of this facility will extract four sows at a time, or the number required to fill all the breeding areas from one pen at one time, in lieu of moving each sow individually from the pen to the breeding area. Double-hinged gates are available on each pen to allow easier sow and boar movement.

At one end of the facility, additional pens are provided to separate mated animals from those still requiring mating. This makes it easier to monitor a sow's status in the facility. After the initial heat-checking or mating, the sows are returned to a separate pen until all the sows from one pen have been heat-checked or mated; the sows are then returned to their original pen. If a mating has occurred, the boar is then returned to the back of the pen and a new boar moved to the front. This facility uses approximately two minutes per sow with two individuals.

Conclusions

The following conclusions were made after studying the operation of these four swine breeding facilities:

- 1.Sow movement is not a problem, even for a sow in estrus. While moving sows long distances may slow the mating process, it is not a limiting factor.
- 2.Boars quickly learn the movement sequence for mating and move rapidly to the mating area and back to their pen.
- 3.Animal movement should not require turning animals around in an aisle to save time. However, no problems were observed in turning animals in four-foot aisles.
- 4.Additional pens or storage areas must be provided to sort sows after the mating process. This can be eliminated in facilities using sow crates if the sows are returned to their crate after mating.
- 5.Systems using breeding pens with groups of sows and boars require more personnel during mating. Personnel should be available to protect the boar while he is mounted.
- 6.One person can generally handle only three to four boars in individual or group pens during mating.
- 7.Limited data indicates that five minutes per sow should be allowed for operation of breeding facilities.

