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Selection and Management of Herd Boars

W. L. Singleton and K. J. Drewry, Animal Sciences Department

Making the right decisions in herd boar selection and management can mean genetically-superior progeny, better herd reproductive performance and, thus, greater returns to your swine enterprise.

About one-fifth the total cost of swine production goes to maintain the breeding herd. Remember, a gestating or lactating female requires the same amount of feed, space and labor regardless of how large or small her litter. And it's the herd boar that has 70 percent of the "say" when it comes to such things as litter size, growth rate, feed efficiency and meatiness of the pig crop. In other words, it pays the swine producer big dividends to select the right boar for his production system and then to manage that boar for maximum reproductive performance.

The purpose of this publication is to consider the essentials of good boar selection and management. Discussed will be such questions as where and when to buy a boar, what factors to consider in boar selection, what management steps are important both before and during the breeding seasons, and where to get additional information on other aspects of swine selection and breeding.

Herd Boar Selection

WHERE TO BUY HERD BOARS

Over 80 percent of boars purchased are from purebred breeders through private treaty or various area, state and national breed sales. Central-station performance-tested boar sales, conducted in most states, account for another 5 to 8 percent of purchases. And sales by commercial breeding organizations provide the remaining 12 to 15 percent of boars for swine herds.

These are all good sources of breeding animals. Which is best will depend on factors that are unique to you and your operation, such as personal preference and goals, type of production system, financial limitations, etc.

Adjustment Policy. Regardless of where you buy herd boars, it is essential that both you and the seller understand the sale policy and responsibilities before the transaction. A reputable breeder will gladly enter into a written agreement with the buyer concerning fair adjustment if problems develop with the boar. (Figure 1 shows a sample buyer-seller adjustment policy.) Such a breeder is also usually willing to serve as a consultant to the buyer when selecting boars. He's an excellent source of practical swine management information, and his suggestions should be carefully considered. Both breeder and buyer gain if no adjustment is required on a boar.

A desirable herd boar—long bodied, structurally correct, well muscled, heavy boned, masculine and backed by good records.
A CODE OF FAIR PRACTICE FOR BUYERS AND SELLERS OF PUREBRED REGISTERED SWINE

Adopted and Recommended by National Association of Swine Records April 17, 1973

 Buyers of purebred, registered boars and gilts buy them to be breeders. Many factors may affect an animal's breeding capabilities. Many of these are not visible at time of purchase. Some problems may be the result of management before sale. Some the result of handling and management by the buyer after purchase. Some may be hereditary. Because of this, adjustments need to be a sharing of responsibilities.

All Adjustments Are a Matter Between Buyer and Seller

The National Association of Swine Records or individual Registrars assume no responsibilities for enforcement of these recommendations.

Standard Warranty

All purebred, registered gilts, over four months of age, (Not used for breeding under 7 months of age) sold as breeding animals for breeding purposes are sold with a warranty that they are capable of and will breed. If and when any said animal does prove to be a non-breeder the seller shall make an adjustment to the satisfaction of the buyer, provided the buyer informs the seller of the situation within a reasonable time after purchase in keeping with normal management practice characteristic of buyer's type of operation.

In all purebred transactions the registration certificate is an integral part of the transaction and shall be delivered to the buyer properly transferred on the Association records at the expense of the seller.

Suggested Warranty Adjustments

(These are only suggestions considered as generally acceptable within the industry. Other adjustments may be made if satisfactory to both buyer and seller.)

Boars Falling to Serve or Settle Sows

1. Refund the purchase price of the boar if the boar fails to serve or settle in 90 days after purchase.

Gilts Sold as Open

A — If proven to be bred . . . 1 — Make a replacement of another gilt satisfactory to buyer. 2 — Refund purchase price and market value of gilt as shown by sale receipt.

B — If proven to be a non-breeder . . . 1 — Make a replacement of another gilt satisfactory to buyer. 2 — Refund purchase price or difference between purchase price and market value of gilt as shown by sale receipt. 3 — Give buyer credit, (amount to be agreed upon by both buyer and seller) on the purchase of another gilt in the future.

Bred Sows

A — Are expected to be bred to a designated boar and date of service. When proven otherwise . . . 1 — Replace the sow with another satisfactory to the buyer. 2 — Refund the difference between the purchase price and market value of sow as shown by sale receipt. 3 — If buyer desires to keep sow, refund one-half difference between purchase price and market value of gilt at time of purchase.

Handling the New Boar

1 — Buy boars two months before needed for breeding. 2 — Keep boar in isolation from other hogs for 30 days. 3 — Don't use a young boar until seven months or more of age. 4 — Give boar fence line contact with females for three weeks. 5 — Meat boar to three guts thoroughly in heat to start boar. 6 — Keep boar cool. 7 — When pen mating allow one young boar to 12 to 15 gilts.

Handling Gilts Before Breeding

1 — Don't breed gilts until at least seven months old. 2 — Breed gilts on third heat period or later. 3 — Expose gilts to boar by fence line contact. 4 — Limit feed 200 pound gilts until just before breeding.

Age of Boar. Select boars at 5 or 6 months of age (approximately 220 pounds) for use beginning at about 9 months. Many producers begin mating boars that are too young. Even though he appears to be large enough to use at an earlier age, a boar does not reach complete sexual maturity until he is at least 8½ months old.

Strong Points of Herds. Select a boar that will improve the weak points of your herd without sacrificing the strong points. You should also be aware of the strong and weak points of the herd from which your boar may come. Remember, success for both purebred and commercial producer, regardless of breeding program, depends on use of a genetically superior boar.

Individuality of the Boar. Individuality refers to a combination of characteristics used in live animal evaluation that includes: size, masculinity, smoothness, constitution, soundness, disposition, conformation, teat number and placement, muscling, degree of finish plus those traits related to breed type. Most breeders are proficient at evaluating a boar for these characteristics. Caution: avoid boars showing

WHEN TO BUY HERD BOARS

Boars should be purchased at least 45-60 days before the breeding season starts. This gives you ample time to locate superior animals and, once selected, to check them for health, condition them to your farm, and test-mate or evaluate them for reproductive performance.

FACTORS TO CONSIDER IN BOAR SELECTION

There are at least eight important factors to consider when buying a herd boar — breed, age, strong and weak points of both buyer's and seller's herds, individuality, production, performance records, pedigree, show ring winnings, and health. Following is a brief look at each one:

Breed of Boar. This may be important for the commercial producer, depending on his breeding program. Each breed possesses traits that make boars of that breed useful in both straight- and cross-breeding programs. Keep in mind that most cross-breeding programs become more systematic and easy to manage if purebred boars are used.
symptoms of PSS (porcine stress syndrome)—i.e., constant tail-twitching, trembling ears and red splotches on skin when excited.

**Production Performance Records.** Performance records of boars or their littersmates are valuable evaluation tools in boar selection. And today, more and more swine breeders are keeping records on individual boars through on-farm and central-station testing programs. When selecting boars on the basis of performance records, consider, if possible, only those in the top 50 percent of the herd or test group, only those from litters of eight or more pigs farrowed, and only those that were raised under the same production conditions that exist on your farm—e.g., on concrete or on slats, in confinement or on pasture.

Boars meeting the following production performance record standards should receive serious attention as possible herd sires: (1) age at 220 pounds—150 days or less; (2) daily gain from 50 to 220 pounds—2.00 pounds per day or higher; (3) feed efficiency, boar basis—275 pounds per 100 pounds gain or less; (4) adjusted backfat probe at 220 pounds—0.90 to 1.30 inches; and (5) adjusted sonoray loineye area at 220 pounds, if obtained—5.80 square inches or larger. Remember also, if littersmate barrow or gilt production or carcass traits are used, they must be adjusted for sex to be comparable to boar records.

**Pedigree.** Pedigree gives the ancestry of the boar and is most useful when combined with records of close relatives listed in the pedigree. Check for breed certification and production registry information on the pedigree. If not available, the place more emphasis on individuality and performance of the boar and less on his pedigree.

Pedigrees are also useful in determining the breeding program of the seller, which can give further clue to a boar’s future performance. A line-bred boar may have some degree of inbreeding and will probably breed better than he looks. An outbred or outcross boar, on the other hand, may not carry as much inbreeding and will thus tend not to breed as well as his looks. This principle applies for both purebred and commercial producers.

**Show ring winnings.** Show winnings of the seller’s herd are also useful criteria in selecting a herd boar. On-foot winnings, which represent the opinions of qualified swine judges, indicate how the breeder’s animals compare with animals from other herds, in both breed and open shows. Carcass show winnings, which include both on-foot and carcass competition, are usually even more valuable indicators. Show winnings tend to identify those lines and strains that most closely approach the ideal of the type desired at the time.

**Health.** The health history of the seller’s herd and of the prospective herd boar is one of the most important factors to consider. When selecting a boar, observe all the animals in the herd. And be sure to obtain information on any previous health treatments and on the nutritional program followed in development of the prospective boar. Reputable breeders will be glad to give a written health-management record for the boar. All animals selected should meet the requirements for interstate shipment.

**TRANSPORTING NEW-PURCHASED BOARS**

Proper care in transporting boars will insure maximum service by minimizing stress, injuries and possible sickness. Any stress or sickness that causes high temperatures can lower fertility or even produce temporary sterility which might last 6 to 8 weeks. Therefore, carefully follow these suggestions when transporting your newly-purchased herd boar:

1. Do not ship boars that have just been taken off a self-feeder or have been fed within an hour or two before loading.
2. Have safe, well-built loading and unloading facilities.
3. Clean and disinfect the truck before transporting the boar.
4. Provide in the truck suitable bedding (sand in summer, straw in winter) and protection against weather.
5. Use a divider when hauling strange boars together in the same truck.

**Herd Boar Management Before and After the Breeding Season**

**ISOLATION**

Isolate a new-purchased boar for at least 30 days in quarters that have been cleaned and disinfected 2 weeks before the boar arrives. The isolation facility, to be adequate, should (1) be located several hundred feet from the rest of the herd; (2) provide protection from extreme weather conditions; (3) allow about 20 square feet of dry, draft-free, well-ventilated sleeping area per animal; and (4) be adjacent to an exercise area, preferably pasture.
HEALTH CHECK AND PARASITE CONTROL

The chances of health or parasite problems are greatly reduced by purchasing boars from clean herds. Exactly what health measures are necessary will depend largely on the previous health-management record of the boar. Regardless of that record, however, the buyer should have all purchased boars inspected by a veterinarian sometime during the initial 30-day isolation period. The following health measures are recommended at that time:

1. The boar should be checked for internal and external parasites and treated, if necessary.

2. The boar should be revaccinated for erysipelas and leptospirosis.

3. A boar from a non-validated brucellosis-free herd or one exposed to brucellosis any time prior to purchase or enroute to the farm, should pass a negative brucellosis test within 30 days. A boar from a validated brucellosis-free herd and not exposed would probably not need to be tested.

FEEDING

If the seller’s boar ration is drastically different from yours, it’s a good idea to buy about 50 to 75 pounds of his ration in order to make a gradual transition to your feeding program. Also, if you encounter any nutritional problems during the isolation and breaking-in period, let the breeder know; he may be able to give you assistance.

Young boars are still growing and should not be underfed. Depending on age and condition, the herd boar heading into the breeding season should receive between 4 and 6 pounds of a balanced 14% protein ration per day—5 to 6 pounds for the younger boars, 4 to 5 pounds for the older ones. Also consider increasing the feed level 2 weeks prior to and during the breeding period.

Adequate nutrition is important after the breeding season as well as before. How much feed is required will depend on the boar’s body condition and the amount of time between breeding periods. But generally, an average conditioned boar not in service can be maintained on about 4 pounds daily of a balanced 14% protein ration. Do not allow him to become overweight during this period.

TEST-MATING AND SEMEN EVALUATION

The simple practice of test-mating can save many dollars in lost time and facilities by detecting a problem boar before the breeding season starts. Boars should be test-mated at about 7½ to 8 months of age and after their isolation period. The procedure is as follows:

1. Take an estrus gilt to the boar, and observe the boar for aggressiveness and desire to mate.

2. Give the boar assistance in the first service or two, if necessary. Often, young boars will mount the front end of a gilt—a bad habit learned back in the boar pen and a possible source of injury. If the boar mounts this way, gently move him around to the proper position. He should soon learn to mount correctly.

3. Observe for the boar’s ability to enter the gilt. Check for a limp, infanticile or tied penis.

4. If possible, collect a semen sample and have it evaluated. Semen collection by hand pressure technique is preferred, but one can also get a sample from semen run-back while the boar is breeding the gilt. Have your veterinarian or a qualified technician evaluate the semen for motility, concentration, morphology and volume.

There is no absolute laboratory test for fertility; but through test-mating and semen evaluation, it is possible to detect a sterile boar or one of questionable fertility. If a boar exhibits adequate libido (sex drive), has a normal reproductive system and tests reveal good semen quality, chances are that he will be a good breeder.

Herd Boar Management During the Breeding Season

The goal of any good swine breeding program is to have a high percentage of the sows farrow large litters in a short period of time. The following boar management practices during the breeding season will help you, the swine producer, to realize this goal.

HEALTH MEASURES

Keep the boar healthy. Let him stay in the same pen he had before the breeding season. Consider adding antibiotics or sulfas to his ration to guard against low-grade infections. An unnoticeable temperature increase resulting from a fever can markedly decrease a boar’s breeding ability and semen quality.

DETERMINING ADEQUATE BOAR POWER

It’s important that you provide adequate boar power for the groups of females to be bred. Generally, a young boar can pen-breed 10 or 12 gilts during a 4-week breeding period; an older boar, up to 15 or 20. Don’t turn a young, untried boar in with a group of
sows just weaned and coming into heat. The results could be disastrous, and you may lose a boar. Use more boar power than normal when breeding sows at the first post-weaning estrus (heat) period.

To determine adequate boar power for your herd, think in terms of number of services required per week rather than number of sows per boar (Table 1). If the estrus cycles of a group of sows tend to be synchronized within a 3- to 5-day period, more boar power is needed than if the groups comes into heat over a 3-week period.

**BREEDING SCHEDULE AND METHOD**

Alternate or rotate boars on a 12- or 24-hour schedule. A rotation schedule offers the following advantages:

1. It allows all sows to be bred twice during the estrus period, thus guarding against results from a lazy or sterile boar. Also, two services consistently result in an extra pig per litter as compared to one service.

<table>
<thead>
<tr>
<th>Table 1. Maximum Services per Boar, by Age</th>
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<tbody>
<tr>
<td>Boar</td>
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<tr>
<td>Young (8½ - 12 months of age)</td>
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<tr>
<td>Mature (over 12 months of age)</td>
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2. It allows a producer to keep two groups of boars—one group being mature, proven boars; the other being young, unproven boars.

3. It increases the opportunity for observing the boars and sows mate. So if a female or boar problem exists, you are aware of it sooner than if you turn them in together and forget about them.

Consider using the hand-mating method of breeding. First of all, it gives you exact breeding dates thus exact farrowing dates on all females. And secondly, if a boar or sow fertility problem occurs, you are immediately aware of it. With proper facilities and pen arrangements, hand-mating takes less labor than one might think.

**Summary and Additional Help**

8. Maintain management practices during the off-season.

**RELATED PUBLICATIONS**

Single copies of the following Purdue Extension publications on swine performance testing are available free of charge to Indiana residents from their local county Extension office or from the CES Mailing Room, AGAD Building, Purdue University, West Lafayette, Indiana 47907:

- "Indiana On-Farm Boar Testing Program Rules and Regulations" (AS-380)
- "Indiana Station Boar Testing Program" (AS-399)
- "Indiana Swine Sire Progeny Testing Program" (AS-315)