Hog Breeding Facts

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The essential act of sexual or biparental reproduction is the fusion of one germ cell from each parent. To understand the modern concepts of fecundity and inheritance it is necessary to understand the reproduction mechanism. While fusion of the germ cells is the basis of the process, there are many cells, tissues, and operations involved in preparing them for conjugation; these organs insure that the newly formed organism is nourished and protected until it is capable of leading an independent existence of its own.

Organs

The reproductive organs of the boar are required only to impart his hereditary characters. The female must not only do this but must also nourish and protect the pigs until they can look after themselves. The female organs include: 1. ovaries, for producing eggs; 2. oviducts, to convey them to a safe place for fertilization; 3. uterine horns, where growing and developing embryos can be fed and protected; 4. birth canal, through which the young pigs are expelled; and 5. mammary glands, for feeding the pigs until they can fend for themselves.

In the boar the essential organ corresponding to the ovary of the sow is the testicle. Here sperm are produced and nurtured. A duct system conveys the sperm and seminal fluids through the penis to the uterus in the female during service.

Cycles

In response to the ups and downs of hormone concentrations in the blood, the sow's reproductive tract is made ready for nurturing fertilized eggs into young pigs ready for birth. Sows normally come in heat every 19 to 21 days marking the end of the estrous cycle.

Heat and Ovulation

The average length of the heat period is from 2 to 3 days. Sows usually remain in heat from 12 to 15 hours longer than gilts. During the heat period, eggs are shed which develop into zygotes when fertilized by the sperm of the boar.

It is believed that most of the eggs are shed during the latter part of the heat period. Therefore, it is best to breed the sow on the second day of heat. If she is still in heat on the third day, breed her again. There is evidence that this practice will improve the litter size.

Sows usually come into heat 3 to 5 days after farrowing but few will conceive then. If the pigs are removed from the sow 2 or 3 days after birth, the sow will often come in heat and can be bred with satisfactory results on the 17th to 25th day after this early weaning.

Farmers frequently want to breed some sows that are still suckling litters, especially
their sows until the second heat period. This maintains their usual farrowing season and allows the sows to "rest up" for about a month before being rebred. A further advantage is that more pigs are usually farrowed per litter from these "rested" sows.

Mechanics of Breeding

The mechanics of breeding resolve themselves down to free-standing vs. breeding crate, primarily. The main advantage of the breeding crate over the free-standing method of service is that sows and gilts can be served by boars of most any size or age. Forced matings can also be affected; however these rarely result in an established pregnancy.

Figure 1. Reproductive organs of a non-pregnant, sexually mature gilt. Eggs produced by the ovaries enter the small Fallopian tubes where fertilization by male sperm occurs. The fertilized ova then pass into the uterine horns and develop into embryo pigs. Membranes of the embryos attach to the wall of the uterus and the developing pigs get their nourishment from the blood system of the dam.

if the farrowings on the farm have been strung out. Sows can often be brought into heat during the latter part of lactation by turning the boar in with them. Nursing sows are more likely to come in heat if self-fed.

Normally, sows come into heat 3 or 4 days after the pigs are weaned. Most swine producers breed them at this time. Some farmers are now weaning their pigs at about 5 weeks of age. Most swine producers following this practice don't usually rebreed

Figure 2. Breeding crates can be adjusted to compensate for differences in size of boars and sows. The foot rests on either side of the gilt support much of the weight of the boar.
Pasture breeding—When swine producers are farming on a large scale, pasture breeding is often more practical because of time and labor. In this system, the boar is allowed to run with the sows. A vigorous yearling or mature boar should be provided for each 15 to 20 sows. A young boar should not be turned in with more than eight or ten gilts. If the number of sows necessitates the use of two boars, it is a good practice to divide the sows and keep one boar with each group. Or alternate the boars so that they run with the entire herd only every other day.

Artificial Insemination—This method combines most of the advantages of hand breeding with the additional opportunity of extending the effective use of your boar over more sows.

The normal ejaculate of a boar is from 150 to 500 ml of semen containing from 20 to 50 billion spermatozoa. When suitable extenders and storage methods are developed, some 15 to 20 sows could be bred per ejaculate, resulting in from 15,000 to 20,000 pigs per year from one boar. Details to make artificial insemination more practical are being worked out. Keep posted, for it holds a great future.

Three alternatives may be used rather extensively on Indiana farms in the future. In some cases the farmer will own the boar, collect and process the semen and inseminate his own sows. Others may own their boar and hire a technician to collect, process and inseminate. The smaller operator may call on an artificial inseminating organization such as is more frequently done with cattle now.

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