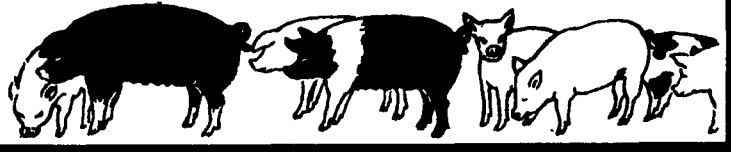


Pork Prose

by
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Improving Reproductive Efficiency

Producers have lots of ways to measure reproductive efficiency -- pigs/litter, litters/year, pigs/sow/year, pigs/crate/year, total herd feed conversion and profit, to mention a few. All of these are useful. But none of them tells the whole story. Whatever numbers you chose to monitor herd performance, remember that there are two major overhead expenses you must cover: 1) the breeding herd and 2) the facilities.

The breeding herd may be efficient, but you may be short in the total number of sows you're breeding. That means the facility cost will be high for each pig sold. This is a significant problem for almost every producer I visit that has a "reproductive problem" in his herd.

Another problem that occasionally happens is that you may be able to keep the facilities at capacity, but you're breeding herd might be abnormally large and inefficient.

The point is it's important to be sure that the farrowing house is full and the breeding herd is efficient. Here are a few tips on getting that done.

CULLING

The goal behind any culling system is to improve genetic merit in the herd. Unfortunately, it seldom happens that way. First, reproductive traits are influenced more by management than genetics. Second the boars maintain most of the genetic material in the herd, especially when you're saving your own replacement gilts. And finally, most sows are culled for reasons other than productivity.

Be cautious not to over-cull, since you will farrow a greater percentage of gilts. The peak performance of a sow occurs in the 3rd through 6th parity, so it's important to maintain the bulk of your sow herd in this age bracket if at all practical.

GILT POOL MANAGEMENT

Three secrets to a well-managed gilt pool: 1) know when you'll need the gilts 2) Have enough gilts available 3) breed or sell all gilts (of breeding age) in the pool within 30 days. The steps you can follow to meet these goals:

1. For every sow you expect to cull, move 3 to 4 gilts from the finishing floor to the breeding barn.
2. Be sure gilts have fence line contact with the boar.
3. Sell any gilts that don't cycle within the first 7 to 10 days.
4. Keep the gilts that cycle and breed them 3 weeks later (on their second cycle).

This system automatically selects for early estrus. It allows you to sell the non-cycling gilts at a typical market weight. And it permits breeding on the second heat.

Many systems, instead, maintain one or two gilts for every "empty crate." Gilts are bred on their second service or whenever an empty spot needs filled. The non-cycling gilts go to market at 280 to 300 pounds. The result is gilts are not selected for early estrus. Feed expenses are often higher. And the non-cycling gilts are discounted at the market because they're heavy.

OVER-FARROWING

An example of over-farrowing is farrowing 14 to 15 sows for a farrowing room that contains 12 crates. The "extra" sows are weaned at day 2 or 3, pigs are fostered to other sows, and litters are standardized at about 12 per sow. The space, labor and feed for the extra sows will cost about \$80/sow. That's equivalent to \$8 to \$10 for every additional live pig, and for most producers, that's a good investment. But to get it done, the gilt pool has to be managed closely.

HEAT DETECTION

Keep groups small (less than 10). Rely on the boar and yourself for spotting sows in heat. Watch timid sows closely. Check heat twice per day.

OPTIMAL TIME FOR BREEDING

The ideal time to breed the average sow is about 28 hours after the beginning of estrus. Sows should be bred roughly 12 hours after they first come into heat and again about 12 hours later. Because gilts exhibit heat for a much shorter time than sows, they should be bred every 12 hours from the time you first see them in heat.

NUMBER OF SERVICES

For the sow: two services provides a big boost in conception rate and litter size compared to one service. Three services may yield a slight benefit in conception rate over two services. More than three services is not a good investment. Sows should be bred to two different boars, in the event that one boar is sub-fertile.

For the boar: Anytime you use a boar more once a day or more than six times per week, you risk a drop in conception rate and litter size. As a rule of thumb, when weaning a group of sows, provide one boar for every two to three sows.

HANDMATING VS PENMATING

The two drawbacks to handmating are, of course, time and space. I don't think I've ever met a producer that questioned the merits of handmating. The problem for many of you is finding the time. But if you can take the time, you can potentially overcome the typical problems observed with penmating -- boar overuse, sows missed, and poor matings. If handmating is just not possible for your operation, then provide the next best thing by rotating boars at least

DES MOINES, IA — More than 500 pork producer leaders and elected producer delegates from across the country will join together at Kansas City's Hyatt Regency Crown Center Hotel for the 1989 National Pork Industry Forum, March 1-3.

During Pork Forum '89, the National Pork Producers Council, National Pork Council Women, Pork Act Delegate Body and the National Pork Board will hold their annual meetings and take action on many important issues. These sessions provide ongoing grassroots producer input into domestic and international concerns of importance to the pork industry.

The central theme, "Commitment to Quality," will carry through all aspects of the event emphasizing the industry's priorities in planning for the 21st Century.

Len Dawson, former Kansas

City Chiefs football quarterback and well-known sports broadcaster, will be the featured Forum luncheon speaker on Friday, March 3. A special program to honor Pork Industry Hall of Fame recipients, Paul McNutt, Iowa City, Iowa, and George Brauer, Oakford, Ill., along with Distinguished Service Award winners,

Marvin Garner, St. Joseph, Mo. and Keith Myers, Grundy Center, Iowa, will take place during the National Forum Banquet on Friday evening.

Pork producers not directly involved as voting delegates are welcome to attend any of the delegate meetings to watch key industry decisions being made.

Annual Keystone Pork Congress Scheduled

HARRISBURG — The eleventh annual Keystone Pork Congress will be held February 15, 1988 at the Penn Harris Inn in Camp Hill. This year's KPC will feature a trade show with more than 40 exhibits, a "Pork Bowl" contest for 4-H and FFA members, educational seminars and the annual banquet of the Pennsylvania Pork Producers Council. Dr.

Roy Shultz, practicing veterinarian from Avoca, Iowa is the featured speaker on the educational program and will discuss "Herd Health Programs". Invited banquet speaker is Ed Johnson, president of the Agri-Broadcasting Network in Columbus, OH. For a program copy, contact your county extension office. To make banquet reservations, call Stephen Burkholder 215/682-2871.

Chicken Stud Farms On The Horizon

UNIVERSITY PARK (Centre) — Stud farms are just for champion race horses and prize bulls, right? Not anymore. Think chickens.

According to Penn State scientists Dr. Roy Hammerstedt, professor of biochemistry, and Dr. Guy Barbato, assistant professor of poultry science, commercial chicken stud farms are definitely on the horizon. The two researchers have even started a prototype on Penn State's University Park campus as part of their research on the effects of freezing on the preservation of rooster semen.

The 600 birds in Hammerstedt and Barbato's chicken stud farm came from strains developed at the University of British Columbia and the University of Minnesota where researchers bred them according to how well the rooster semen froze.

With the aid of a grant from the U.S. Department of Agriculture, the two Penn State scientists are now comparing the biochemical and genetic traits of the lines that freeze well with the lines that don't.

"I don't think we'll find anything like a 'freeze gene,'" Hammerstedt says. "But I do think there may be compensatory enzymes in certain chicken lines, for example, that enable their sperm cells to better withstand the stress of freezing and thawing and still remain fertile."

Hammerstedt, who has studied the basic biochemistry of semen from a variety of animals during the last 20 years, is looking for biochemical traits that enhance freezability as well as the best freezing methods.

Barbato, a poultry specialist, is studying the ways in which the desirable traits are inherited.

Although scientists have developed successful techniques for freezing horse and cattle semen, no one has developed commercial techniques for chickens.

Barbato notes, "If you talk to some people in the field, they say it is impossible to freeze chicken sperm."

The ability to freeze rooster semen would enable breeders to increase efficiency and maximize genetic progress. Barbato explains that a prize rooster might be able to keep 10 to 12 females fertile.

"That rooster really only makes a small genetic contribution to the

next generation," he notes. "By being able to freeze his semen, you are able to go to 100 or 200 hens. You can mail the semen to California or to Australia or Brazil, or to Third World countries that are having trouble improving their genetic stock."

"Freezing semen maximizes genetic progress and if we are able to maximize progress, we can directly influence the cost to the consumer."

Barbato and Hammerstedt agree that when a reliable and economic method of freezing rooster semen is found, chicken stud farms, similar to theirs, will be the natural result. These stud farms will, however, differ significantly from horse and cattle farms.

Barbato says, "Frozen semen is actually used to produce cows that are used for milk production. That is just completely unrealistic for chickens since the U.S. produces more than 5.5 billion chickens a year."

He sees artificial insemination with frozen genetically superior semen obtained from chicken stud farms as a tool for breeders who then will supply chicken producers with superior stock.

Hammerstedt points out that the Penn State research will have other applications beyond chicken stud farms as well. Since sperm are single cells, the researchers will be able to use them as a model for other cells or even whole organs. He notes, "There probably is a common set of physical properties that allow a cell to freeze."

Learning those properties will be useful to those who want, for example, to preserve human organs for transplant by freezing.

1989 Farm Show Turkey Winners

- Turkey**
Large Young Turkey Toms
 1. Bolton Turkey Farm; 2. Bolton Turkey Farm, 3. Bolton Turkey Farm.
Large Young Turkey Hens
 1. Konhaus Farms; 2. Strockland Farms; 3. Bolton Turkey Farm.
Medium Young Turkey Hens
 1. Konhaus Farms; 2. Konhaus Farms; 3. Konhaus Farms.
Dressed Capons
 1. Susan Glouner; 2. E. Ruth Peifer, 3. Mervin Peifer.
Dressed Capons
FFA Members & Schools
 1. Kevin Sangrey; 2. Keith Eshelman.
Champion Dressed Turkey
 Bolton Turkey Farm
Best Dressed Turkey Display
 Bolton Turkey Farm
Best Dressed Capon
 Susan Glouner
Best Dressed Capon - Jr. Class
 Kevin Sangrey