Pork Prose

by
Kenneth B. Kephart
Extension Livestock Spec.
University of Del.

Fifty years from now, I suspect hogs will eat from feeders much like the ones we use today. And I'll bet most producers will still be feeding sows with a cart and a scoop. But over the next half-century, new technology will change a lot of other aspects of hog farming. We'll be able to grow more hogs faster on less feed and hopefully provide the consumer with a better product.

One significant breakthrough is this business of recombinant DNA -- some folks call it genetic engineering. You'll recall that DNA is the material in a cell's nucleus that contains the "genetic blueprint." You have DNA, your hogs have DNA, even the E. coli bugs that cause scours in your farrowing house have DNA. Scientists can now take a tiny piece of DNA (called a gene) from, say, a virus and splice it onto the DNA in a type of bacteria. Is that such a big deal? You bet it is.

The gene that they insert into bacteria could, for example, "tell" the bacteria to make a protein that you need to vaccinate your sows. Scientists could grow these special bacteria on a large scale – and harvest the protein.

What else could you make using recombinant DNA techniques? Growth hormone. Ask Dr. Terry Etherton at Penn State University what growth hormone has to do with raising hogs. He'll tell you that daily growth hormone injections can improve growth rates by 12 to 15 percent, and feed efficiency by 20 percent. That's right, 20 percent. Considering feed costs at $8/cwt and overhead costs of growing hogs at 20 cents/day, growth hormone could save you $11 or $12 a head. But there's more. Etherton comments: "In our last trial, pigs receiving growth hormone had 18 percent less carcass fat, but still showed an improvement in loin-eye marbling."

Unfortunately, there are a few hangups with growth hormone. "Obviously, producers can't be injecting pigs every day," Etherton says. "Soon, we hope to come up with a better delivery system, perhaps an implant. And it's still too expensive. Right now growth hormone costs over $2,500 a gram. I'm hoping they'll have the recombinant technique perfected in the next three years so it becomes practical to use on the farm."

Scientists will soon be using genetic engineering to make other compounds, like amino acids, too. Currently lysine and methionine are the only amino acids cheap enough to use in swine feed. Once the cost of a few others like tryptophan and threonine get into range, we'll be able to take most of the soybean meal out of hog rations and replace it with corn and synthetic amino acids.

Another recent development, already used extensively with cattle, is embryo transfer. Take a high performing sow, superovulate her and breed her to a high performing boar. Wait a couple of days, then flush out the developing embryos and put them into several recipient sows. The donor sow can go on producing a new batch of embryos, while the recipients carry the litters to term and raise the pigs. Ideally, these pigs would provide more genetic potential than anything you've got in your herd.

Artificial insemination is yet another technique that can improve your efficiency, but it hasn't caught on to a great extent in the hog industry. Most producers find it impractical to breed artificially on a large scale. But a lot of folks are using A.I. to breed their best sows. They can then derive replacement gilts and herd boars from these offspring. This allows producers to close their herds, which is a big step in preventing disease transmission.

So biotechnology has given us management tools that are useful now, plus several more down the road. But before you open the door to tomorrow's research, take a hard look at your situation today and ask yourself if you're using the knowledge that already exists.

One simple thing you can do is keep good records. Total herd feed efficiency, breeding record, conception rate, number weaned, weaning weights and post-weaning rate of gain are just a few of the things you ought to be jotting down. Use these records to spot problems and make decisions. If the numbers are too overwhelming for pencil and paper, a computer might help.

Use performance-tested breeding stock. Buy boars on the basis of looks and performance. Know how well the pigs do on your farm, then bring in the blood lines that will do even better.

Make solid efforts at marketing. Look at all the markets in your area. Consider grade and yield programs. And sell your pigs when the time is right, not just when it's convenient.

Keep your pigs healthy and keep them comfortable. Mange,

(Turn to Page D5)