North American consumers want FAT THEY CAN'T SEE

Ultrasound images are being used to evaluate Duroc pigs for intramuscular fat so that breeders can select the best candidates to sire the next generation of market pigs

BY MIKE MULHERN

Consumers in North America don't like to see the muscle fat in their meat, but their taste buds actually prefer some intramuscular marbling. In Japan, it is the opposite; there, consumers want to see the fat and they pay a premium for more intramuscular marbling.

To help the pork industry deal with complicated consumer preferences, the Canadian Centre for Swine Improvement is conducting a cross-Canada, three-year evaluation of about 6,000 Duroc pigs so that breeders can select the best candidates to sire the next generation of market pigs.

Brian Sullivan, the Ottawa-based CEO of the Canadian Centre for Swine Improvement, says the evaluations are being done using ultrasound along with software technology developed at Iowa State University. Trained technicians take ultrasound images of the pigs. The images are uploaded into the centre's database, where they are reviewed using the Iowa State University software to come up with an estimate of intramuscular fat.

"We work with regional centres across the country, which are members of our organization. They have trained technicians who go to the farms to measure pigs using portable ultrasound technology similar to what you see in hospitals," he says.

Sullivan says they evaluate young pigs before they are selected to be sires and they also evaluate their herd mates. "The breeders will, for example, raise a group of 50 purebred pigs. They will evalu-

ate them all for growth, back fat thickness, lean muscle depth and now intramuscular fat. From that group, which includes females, they will evaluate the top 10 per cent of males and those would be candidates to be sires of the next generation."

The objective of the testing, Sullivan says, "is to evaluate marbling so the industry can make choices depending on the markets. Some markets want lower and some want higher muscle fat."

In Japan, consumers want to see the fat and pay a premium for it.

At the moment, Sullivan notes, commercial pork is extremely lean. "In a pork chop," he said, "an average marbling level might be around two per cent. For fresh meat, generally North American consumers are looking for three per cent or more for the flavour, juiciness and tenderness."

"North American consumers," he says, "don't like to see the fat, but they prefer it once it's cooked. At three per cent intramuscular fat, a pork chop is still very lean, so this offers a natural and healthy way to provide most consumers with a more satisfying eating experience. It's a balancing act between what consumers perceive they want and what they really want on their plate."

Sullivan says the research they are doing will allow the industry to breed pigs to satisfy a range of preferences.

"If the meat is going to be processed into hams or other processed products," he says, "the industry generally wants less fat. So you could give producers the tools to breed for the processed market, while others breed for the fresh market going to Japan or restaurants and hotels where higher levels of marbling are very important."

The research, which will continue for the next two years, is supported by Agriculture and Agri-Food Canada's Canadian Agricultural Adaptation Program. The next phase of the project will be to breed Duroc sires with high marbling and Duroc sires with low marbling to sows and check the offspring to see whether the traits were passed on.

The research will include combining planned breeding and customized feeding of commercial pigs to produce pork with high or low levels of intramuscular fat. The technical quality of the resulting pork loins will be measured and will also be evaluated through consumer taste panels. You can obtain more information on the centre's web site at www.ccsi.ca.

BRIAN SULLIVAN:
Genetics Shaped Career of CCSI Head

Brian Sullivan, CEO of the Canadian Centre for Swine Improvement (CCSI), is a geneticist who has been evaluating livestock traits since the 1980s when he ran sire evaluations for auxiliary traits in Canadian dairy cattle. He later worked as a programmer analyst for the University of Guelph and, from 1991-94, as a swine geneticist for Agriculture and Agri-Food Canada. In that job, he directed and coordinated national evaluations for swine and goats.

Brian was educated at the University of Guelph where he obtained his B.Sc. in Agriculture in 1985 and his MSc. in 1988.

He was chief geneticist for the CCSI from 1995 to 2003 and General Manager from 2003 to 2010 when he was promoted to his current position.

As head of the CCSI, Brian oversees a team of geneticists and computer specialists focused on helping the Canadian swine industry improve genetics. The centre provides national evaluations for a number of economically important traits related to efficiency of production and carcass quality. Current research includes work on ways to enhance genetic resistance to disease and improve pork quality.

Brian works with the Canadian Swine Health Board, the Canadian Pork Council ID and Traceability Committee, PigGen Canada, Ontario Swine Improvement, the National Pork Value Chain Roundtable, the Canadian Meat Science Association and the Centre for Animal Genetic Resources.

One of his hobbies is watching his kids playing ringette and hockey, and he also plays defense in men's pickup hockey and rover in co-ed pickup ringette.

Originally from Bramalea north of Toronto, Brian currently lives and works in Ottawa.