Taking aim at Bovine Respiratory Disease

GENOME PROJECT TO IDENTIFY HIGH IMMUNITY ANGUS BEEF GENETICS THAT PRODUCES HEALTHIER ANIMALS AND REDUCES RELIANCE ON ANTIBIOTICS

High immune response genomics has proven to identify dairy cattle with better natural immunity to diseases. Building on this success, Semex and partners are now working to bring this technology to the beef industry to tackle Bovine Respiratory Disease (BRD).

“It’s a natural next step,” says Dr. Mike Lohuis, Semex’s Vice President of Research & Innovation. BRD costs North American feedlot operators an estimated $1 billion annually. “By taking our Immunity+® disease-resistant technology to the beef industry we believe we could reduce disease costs by up to 50 percent,” says Lohuis.

Semex and its partners, University of Guelph, Angus Genetics Inc. and the Canadian Angus Association, see multiple benefits emerging from their collaboration, which is partially funded by Genome Canada’s Genome Application Partnership program. Working with the University of Guelph’s Dr. Bonnie Mallard, the partners believe they can produce naturally healthier animals that will reduce the time and money producers spend on treating sick animals with antibiotics or other therapeutics. There will also be fewer losses in the feedlot.

MEETING CONSUMER DEMANDS

Consumers will see benefits as natural immunity reduces the need for antibiotics. With beef supply chains being asked to respond to growing consumer concern over antimicrobial resistance and antibiotic use, Lohuis believes developing a high immune response test for Angus cattle could help beef producers provide more naturally healthy animals to help address these concerns.

“More and more we hear of retailers being asked to source their supply from antibiotic-free animals,” says Lohuis. A company like McDonald’s has agreed to do this for chicken. Now the fast food giant is being asked by the same consumers and activist groups to source antibiotic-free beef and pork.

Lohuis estimates that it will take three years to develop the high immune response test and launch Immunity+ Angus sires. The process includes phenotyping 4,000 animals to identify high immune responders, as well as validating the test in slaughter plants by evaluating lung lesion scores – a key phenotype for assessing the impact BRD has on animals.

“BRD is the most common and costly disease affecting feedlot cattle in North America. Mortality is estimated at 2%, but reports peg the death rate as high as 16%. It’s also important to note that animal health and financial impacts are not fully encompassed by mortality statistics. Healthier animals suffer less from disease challenges and grow to their genetic potential. This improves feed efficiency and therefore improves the environmental sustainability of beef.

BRINGING IMMUNITY+® DAIRY SUCCESS TO BEEF

Lohuis notes that Semex Immunity+ technology has produced up to a 50% reduction of pneumonia in dairy calves sired by high immune response bulls. Recent validations in milking dairy cattle show that low immunity dairy animals have 41% higher overall disease incidence. “When it comes to BRD, pharmaceuticals do become less effective over time – they really are only short-term solutions,” he says. “Immunity+ is a long-term solution to sustainable cattle health.”

Lohuis believes that with the high immune response test in place, the market for Immunity+ Angus sires will continue to grow.

“Consumers will see benefits as natural immunity reduces the need for antibiotics,” Lohuis says. “We believe the high immune response technology will be welcomed by consumers, retailers and packers alike.”

“Semex Immunity+ is an example of the type of genomics initiatives that can make a real difference for the feedlot operators and the beef industry,” says Lohuis. “In the future, we believe that natural immunity will become increasingly important, and we are excited to be at the forefront of this movement.”