NATIONAL JOHNE'S EDUCATION INITIATIVE

Johne's Disease – Beef

Volume 1, Number 3 Winter 2010

A cooperative effort of the National Institute for Animal Agriculture, USDA, APHIS, Veterinary Services, in association with the National Johne's Working Group & United States Animal Heath Association

Better to be Proactive Than Sorry

While some seedstock producers argue that testing for Johne's disease is an outward sign that you are concerned that your herd might be infected with *Mycobacterium avium* subspecies *paratuberculosis*. Dave Judd of Judd Ranch, Pomona, Kan., sees things differently. This Kansas purebred breeder argues that testing for Johne's disease is a proactive step that every seedstock producer should undertake.

Dave says testing for Johne's disease and knowing no positive have been found lets him sleep better at night.

"Although we had not seen any cases of Johne's disease in the herd, I want to be confident that Johne's disease is not unknowingly present in our herd and might result in infecting the herds of our customers when they purchase a Judd Ranch bull or female," Dave explains.

Dave, who owns Judd Ranch in partnership with his wife Cindy and sons Nick and Brent, adds that Judd Ranch sells 200-plus Gelbvieh, Red Angus and Balancer bulls every March and 100-plus females every October. With those sales comes responsibilities.

"Your reputation is on the line with every bull or female sold to fellow seedstock producers and commercial cow-calf operators," Dave elaborates. "It just makes sense to participate in a Johne's disease prevention, control and testing program."

Judd Ranch initiated testing for Johne's disease five years ago. The initial testing was recommended by their herd health consulting team out of Kansas State University, with the testing cost partially funded by USDA/APHIS/VS.

Since then, government assistance for testing has ceased. Now the cost of testing is underwritten in full by Judd Ranch and deemed a smart investment.

"Ignorance is not bliss when it comes to Johne's disease," Dave states. "It's a responsibility of seedstock producers such as ourselves to know the prevalence or non-prevalence of Johne's disease in our herds. I would compare this knowledge and confidence level equal to being a certified brucellois-free herd or a PI-free herd."

Judd Ranch turned to a veterinarian from Kansas State University to handle its initial Johne's disease testing. All cattle three years of age and older were blood tested, with samples submitted to the Kansas State University Diagnostic Lab (an approved Johne's disease testing facility). The result: No positive animals were found.

Seedstock producers have lots of responsibilities, and Dave Judd of Judd Ranch says knowing the prevalence or non-prevalence of Johne's disease in your herd is one of those responsibilities. "You don't want to unknowingly pass Johne's disease on to your customers," he states.
Upper righthand corner: Dave Judd, Judd Ranch

Annual Johne's testing has continued at Judd Ranch since that first testing five years ago.

"Judd Ranch is definitely proactive when it comes to herd health," states Dr. Larry Mages who handles the ranch's day-to-day herd health. "I wish every beef seedstock herd in the country would be this proactive. If you're selling seedstock or bulls to commercial cattlemen, then you owe it to your customers to test for Johne's disease and be comfortable that you're not unknowingly introducing Johne's disease into their herds."

Attention to Recips

Johne's disease testing proponents stress that it's important that seedstock producers using embryo transfer programs test recipient females. After all, Mycobacterium avium subspecies paratuberculosis can be passed in utero.

"We use Judd Ranch-raised females as recips so that isn't a problem here," Dave adds. "But, if we ever ran out of recips and had to buy recips, they would be tested straight way before they are used in the ET program. That's just a smart biosecurity measure."

USDA

This e-newsletter is brought to you by the National Johne's Educational Initiative funded by USDA/APHIS/VS and managed by the National Institute for Animal Agriculture. Editor: Teres Lambert. To learn more about Johne's, visit ***www.johnesdisease.org***.

NATIONAL INSTITUTE FOR ANIMAL AGRICULTURE

Vaccine Project Underway

With only one USDA-approved vaccine available to help protect against Johne's disease, many veterinarians and producers would like more available vaccines—particularly since the current approved vaccine has limitations and is not approved for use in all states. With funding from USDA-APHIS-VS, the Johne's Disease Integrated Program has undertaken an effort to identify viable vaccine candidates and evaluate those with the greatest potential for commercial development.

"The project is in the initial stages of a three-step process," states Tiffany Cunningham with JDIP. "Currently, JDIP is in Phase I of the vaccine-testing program and has added an additional participating institution, AgResearch Limited, to the program."

As part of Phase I of the program, scientists have submitted strains of live vaccine candidates and recombinant proteins, and a laboratory at The Pennsylvania State University is coordinating the collection and growing the strains that have been received. The strains will then be distributed to candidate vaccine-testing centers at the University of Wisconsin and the University of Minnesota for blinded evaluation.

"The JDIP Epidemiology and Biostatistics Core at Cornell University will analyze the results of the testing in a blinded manner and identify the 'best candidates'," Cunningham states. "Once the analysis is complete and the blind key is opened, all of the program participants will receive the data at the same time."

During Phase II of the vaccine-testing program, "best candidates" will be evaluated using a mouse model. If all goes as planned, two laboratories will conduct the infection and protection studies in the mouse.

The "best candidates" identified though the mouse studies will be evaluated using a goat model in Phase III.

"This will provide data similar to that from cattle, but the data will be available in a much shorter time frame and at a lower cost," states Robab Katani , a JDIP scientist with The Pennsylvania State University.

"The coordinated three-stage evaluation will take approximately three years to complete. It is expected that this rigorous screening process will identify one or more viable candidates to move forward for commercial development."

The Johne's Disease Integrated Program, often referred to as JDIP, is a comprehensive consortium of scientists whose mission is to promote animal biosecurity through the development and support of projects designed to enhance knowledge, promote education, develop real-world solutions and mitigate losses associated with Johne's Disease. By joining together, efficiencies through collaborative research can be achieved and intellectual and physical resources critical to overall success can be shared. The consortium includes leading scientists in the field, drawn from the world's top academic and government institutions representing the diverse disciplines of microbiology, immunology, pathology, molecular and cellular biology, genomics, proteomics, epidemiology, clinical veterinary medicine, public health, extension and public policy.

Funding from USDA-APHIS-VS allows JDIP to provide competitively awards for meritorious research, education and extension projects addressing Johne's disease. Approximately $1 million will be distributed in the current funding cycle, with $400,000 designated for Johne's disease diagnostics projects, and the remainder available across the remaining JDIP Core and Project areas.

Commercial cow-calf producers and seedstock producers can lessen the chance of introducing Johne's disease into their herds by purchasing bulls and/or females only from Johne's tested herds. The bulls used on these females come from a Johne's tested herd.

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