

Nutrition And Management Keys To Health And Immune Response In Dairy Cattle

MOUNT JOY (Lancaster Co.) — "Designing an effective vaccination program is a little like building a roof," said Jeff Mammet, senior territory manager with Pfizer Animal Health. "You need to know the expected snow load and winds you're building against and understand the basic principles of how it has to work."

Recently, Mammet presented the notes and slides of Dr. Victor Cortese, well-known expert on animal immunology and vaccination, during an Agri-Basics customer seminar on the topic.

Herd health cannot be managed out of a bottle, said Mammet, stressing good management and nutrition as the absolute keys to health and immune response because of two basic principles that are non-negotiable and refuse to be ignored.

The first and foremost non-negotiable principle of immunology is very simple, but also critical to understand: "The clinical signs of disease occur in animals when the disease challenge they are exposed to surpasses the level of disease resistance they possess."

Pulling from his decades of experience as a professional farm manager and his 14 years with Pfizer, Mammet gave examples, including one about a dairyman who was vaccinating for coliform mastitis, and it wasn't working.

"When I got to the farm, I could see why," said Mammet. Barn hygiene was not being ad-

ressed. In effect, the disease challenge was not being reduced through management, so it was still greater than the level of disease resistance the cows were getting out of a bottle.

"The objective of a vaccination program, is to build resistance levels as high as you can, but to do that, you need an immune system that is capable of responding," Mammet explained the second non-negotiable principle. "Sick, stressed, or nutritionally deficient animals will not respond to vaccines because they do not have a fully functional immune system."

So how do vaccines work? Internally, it's a matter of building the defense based on getting a good look at the enemy's offense and being prepared with a strong team of primary and secondary defenders. "It takes three to four weeks to build that recognition, which consists of both responses — antibody (bloodstream) and T-cell (cellular)," Mammet described.

The recommendation to re-vaccinate in two to four weeks comes from the understanding that a second look at the attacker promotes a more rapid response. "They've seen it before so more soldiers are activated with the next dose," said Mammet. "We're tooled up with the first dose, now we can make these guys real fast."

Mammet pointed out that modi-

fied live vaccines produce a quicker onset of immunity than killed vaccines. The system is set up to differentiate the two. In general, killed vaccines activate the bloodstream police. This is why killed vaccines require a booster dose to increase the army because the initial dose doesn't achieve the memory response at the cell level.

The caution with MLV vaccines is they will cause a pregnant animal to lose her calf — with one exception. The exception is for pregnant animals that have already had the MLV vaccine within the previous 11 months. This is one reason why having a vaccination program is so important — to gain the advantages of MLV vaccines, and to effectively protect the herd across generations.

Mammet talked about the four main viruses: BVD, IBR, BRSV, and PI3. He stressed the underlying problem with BVD — the persistently infected (PI) animal. "The PI animal is an insidious problem for dairy producers, and it can get ugly in a big hurry.

When an unborn calf is exposed to BVD between 70 and 120 days gestation, the calf may live, and if so will become a PI shedding BVD virus its entire life."

Mammet also talked about bacteria — especially Lepto, which is a big concern in the dairy business. "Here in the U.S., the most predominant strain of Lepto that causes the insidious economic losses in reproduction, is not contained in any of the 5-way vaccines," he said. "This strain uses the cow as a maintenance host for a month to a year, causing no signs of illness, and then affecting the reproductive system."

"The Lepto strains that use other animals as maintenance hosts (like dogs) will transmit to cattle and cause them to become sick," said Mammet. "We vaccinate for these Lepto strains because they can be transmitted to humans and they can make cows sick. But the Lepto that affects reproduction and uses the cow as a host, is the moving target we really need to address because of the economic cost." Pfizer makes the only vaccine (Spirovac) available for this hardjo-bovis strain.

Vaccination protocols are not one-size-fits-all. The idea behind a herd vaccination program is to give vaccinations when the animal's immune system is most capable of responding and to provide protection for the big economic diseases.

Mammet urged producers to consult with their veterinarians to develop a program that fits their own herd management systems and the challenges on their own farms.

He strongly advised using an intranasal vaccine for newborns and new arrivals because the immediate release of interferon provides a temporary umbrella until vaccines given to older animals or colostrum antibodies consumed by newborns, are up to speed.

More information on this topic is available in the latest editions of the Agri-Basics dairy newsletter "The Agri-Vator" available on-line at www.agribasics.com. Or contact Agri-Basics, Inc. at (800) 361-9265 for a complimentary copy and information about our independent dairy nutrition consulting services.

Critical Discussions, Well-Known Speakers Highlight Upcoming Cattle Convention

DENVER, Colo. — A wide range of topics and interests will be on the table when cattle producers meet Jan. 28-31 in Phoenix, Ariz., for the 2004 Cattle Industry Annual Convention and Trade Show. The event includes meetings of the National Cattlemen's Beef Association (NCBA), the Cattlemen's Beef Promotion and Research Board, the American National CattleWomen, Inc., Cattle-Fax, and the National Cattlemen's Founda-

tion. Attendees will make critical decisions on the behalf of their industry at the four-day event.

Joint industry committees discussing beef checkoff issues and programs will meet Friday, Jan. 30. At those meetings, results of checkoff-funded strategies and tactics for the first three months of fiscal year 2004 will be presented and reviewed.

NCBA policy committees will meet Friday, as well. At those meetings, NCBA affiliates will bring policy from their states and members for discussion, deliberation and adoption.


The Board of Directors meetings for the Cattlemen's Beef Board and the National Cattlemen's Beef Association are Saturday morning, Jan. 31. Awards honoring NCBA Top Hand Members, the National Cattlemen's Foundation Beef Industry Scholarship Award winner, National Collegiate Beef Quiz Bowl winners and others will be presented at a luncheon that day.

Advance registration for the event ends Jan. 2. For more information, contact the NCBA Convention and Meetings Department at (303) 694-0305.

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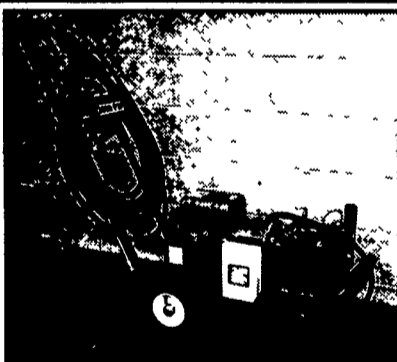
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