

Production Data Summary of Johne's ELISA Tested Dairy Cattle

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Updated November 2007

Over the past several years, three farms have been tracking the production records of cows that test positive for Johne's with the ELISA test versus those that test negative. The division of the cows was solely on the test results not on whether the cow was clinical for the disease. The cows on these farms were tested around dry off when examined for pregnancy. There were two reasons for testing at this time. The first was that we were already handling the cattle. Secondly, there would be time to identify positive cows prior to calving so that the colostrum would not be used. With time, these farms felt there was enough economic benefit to testing, that they did not seek any reimbursement. The following results are taken from the three farms (milking 750-1000 cows) over several years. These farms have daily milk weights so the production is the total milk produced by the cow in the first 305 days of lactation.

Johne's Status (ELISA blood test)	305 day milk total	# of lactations analyzed
ELISA positive	18,982	710
ELISA negative	22,278	5,305
Difference	3,296	

There has been a 3,296 lb. difference between the milk production of an ELISA positive and negative cow for the first 305 days of the lactation. Once again, there is no separation of the cows do to clinical disease, only ELISA results. For example purposes, we will use \$15/cwt milk. The ELISA positive cow costs the farm \$494.40/lactation because of lost production. Similarly, the following table looks at culling data from 2006 in the above herds.

Total # of ELISA positive cows	# of ELISA positive cows culled	Culling Percent	Total # of ELISA negative cows	# of ELISA negative cows culled	Culling Percent
362	212	58.6%	2,187	633	28.9%

Once again the ELISA negative cows have better numbers. Their culling rate is half of the ELISA positive cows.

Dr. Ellen Jordan of Texas A & M University has followed a group of heifers throughout several lactations. Her observations are very similar to the above data. Similarly, she looked at prior lactations of positive and negative cows. So, I went back and looked at some of the latest data from two of the aforementioned herds. Specifically, I looked at the 305 day production of the previous lactations of the Johne's ELISA positive vs negative cows. The following chart summarizes the data.

Johne's Status (ELISA Blood test)	Previous lactation 305 day milk total	# of lactations analyzed
ELISA positive	17,738	201
ELISA negative	20,864	1,499
Difference	3,126	

So, the ELISA positive cows are costing the producer money through the loss of milk production in previous lactations.

What does this all mean?

We know that the test is not 100% accurate and that relying on testing only is NOT the correct way to decrease Johne's. Along with testing, the farms have implemented many of the standard management changes. Those changes include: removal of the calf away from the cows as soon as the calf is born, increased cleaning of the maternity area (especially after a ELISA + cow), only using colostrum from ELISA negative cows, using single source colostrum (ie no pooling of colostrum), keeping youngstock separate from the cow herd until the heifer is due to calve, utilizing designated equipment for youngstock vs older cattle, etc.

Likewise, the testing of the cattle helps identify ELISA + cattle. In these herds, those animals testing positive are identified with an ear tag of a different color from the rest of the herd. This allows all personnel on the farm to be able to easily identify the Johne's ELISA + cows. All workers know that they do not use colostrum from these cows. Also, these cows are not given any second chances. As long as they remain healthy and productive, they are allowed to stay. However, if they do not breed, break with diarrhea, get mastitis, etc., they are culled.

When we initially started the surveillance testing of the herds, it was emphasized strongly that there had to be a long term commitment (minimum of 5 years) to the program and management changes are essential to the success. Johne's is a slow growing organism. We could not get two years into a program and pull the plug. The herds that have been doing the testing and management changes the longest have begun to see "improvement" in the 4th to 5th year. Once again it is important to stay the course in the program.

Please contact your local veterinarian about the Johne's testing and risk assessment programs (www.mda.mo.gov/johnes).