

Consider on-farm Johne's testing

By Kimberlee Schoonmaker

Johne's disease can slip quietly into a herd through the addition of purchased animals. Because of this, many producers test animals before they introduce them into their herd.

When Tim and Dan Liner of Van Dyne, Wis., added cows to bring their 70-cow herd up to 120 cows, they tested animals before they brought them into their herd. "We didn't want to buy animals that

had the potential to pass Johne's to our herd," says Dan Liner.

The problem has been in having to wait several days or even weeks to obtain results from a diagnostic laboratory.

But, that may change with the advent of on-farm Johne's tests.

On-farm testing provides results the same day your veterinarian performs a test, making this technology a fast and convenient way to help you manage Johne's on your dairy.

Get rapid results

The first on-farm test, marketed as "Tip-Test™: Johne's" by ImmuCell Corp., is performed using a blood or serum sample. Similar to an ELISA blood test, the test identifies antibodies produced by a cow in response to Johne's
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To perform an on-farm Johne's test, have your veterinarian collect a blood sample. Using the blood or serum (above), your veterinarian performs the test in about 25 minutes.

disease. (For a description of the test, please see "How to interpret test results" at right.) Because it's done on-farm or in your veterinarian's clinic, you can get results in about 25 minutes.

The short response time is especially helpful in situations such as calving. If a dam is positive, she can infect her calf in utero or shortly after birth, explains Robert Whitlock, veterinarian at the University of Pennsylvania School of Veterinary Medicine and co-chair of the National Johne's Working Group. At birth, calves become infected with Johne's organisms by consuming contaminated bedding, colostrum or manure from positive cows that calved in the same pen. By knowing a cow's disease status, you can separate her from other cows at calving. Then, you can take steps, such as removing the calf from her dam immediately and feeding Johne's-negative colostrum, to further minimize the problem.

Likewise, if a cow shows clinical signs of Johne's — weight loss, diarrhea, reduced milk production — an on-farm test which indicates she is Johne's-positive can help you make the decision to cull her quickly.

Use as a biosecurity test
On-farm tests are not recommended for use as a pre-purchase screening tool. That's because sub-clinical Johne's, which cannot be detected, can be present in a herd several years before clinical signs emerge. However, once a purchase has been made, an on-farm test can be used to help determine the prevalence of Johne's in the incoming animals, says

Stafford Walker, vice president and chief marketing officer for ImmuCell Corp., the Portland, Maine company which received a USDA license to market the Tip-Test™ to veterinarians.

Similar to the current Johne's tests, on-farm tests probably won't be able to detect Johne's in heifers less than two years of age, says Don Hansen, a veterinarian at Oregon State University and chair of education for the National Johne's Working Group. That's because heifers under two years of age haven't been able to develop sufficient levels of antibodies or shed large amounts of the Johne's-causing mycobacteria in their manure.

On-farm tests and ELISA blood tests are not considered to be an official means of identifying low-risk or Johne's-negative herds. That means you would need to confirm a positive Tip-Test™ with an official test, such as a fecal culture, Whitlock says.

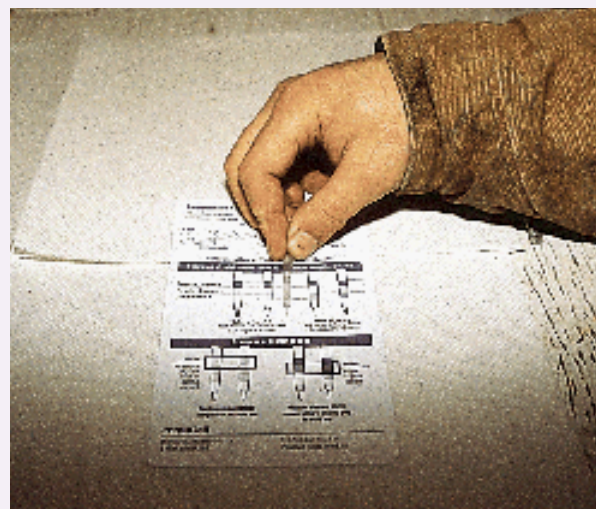
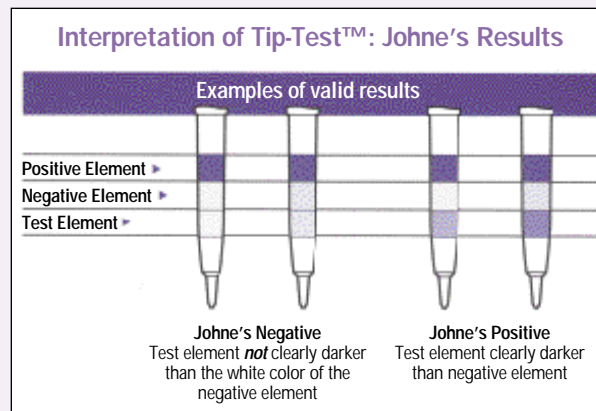
Likewise, a negative test does not indicate an animal is free of Johne's. That's because no Johne's test is 100 percent sensitive for detecting the presence of Johne's. In fact, less than half of all infected cattle will test positive for an ELISA blood test or an on-farm test which detects Johne's antibodies, Whitlock says.

However, an ELISA test exhibits a specificity — another term used to describe a test's accuracy — of about 99 percent; therefore, a positive test indicates the animal is truly positive 99 percent of the time. And, that's good news for ImmuCell's on-farm test which exhibits

HOW TO INTERPRET TEST RESULTS

On-farm testing for Johne's disease may help you identify the disease status of animals quickly.

The first test of its kind, known as "Tip-Test™: Johne's" by ImmuCell Corp., is available to veterinarians. It detects antibodies for Johne's disease in the blood or serum of cows. The test consists of a "tip" with a positive element, a negative element and a test element, an adaptor and a tray with four wells. Your veterinarian performs the test on-farm, with results available in about 25 minutes. Here's how to interpret the results:



Test results can help you determine the prevalence of Johne's.

sensitivity and specificity similar to an ELISA blood test, according to independent research trials.

Although you can't use on-farm tests to guarantee animals are free of Johne's, you can use them to help determine the prevalence of Johne's quickly. And that can help you make management decisions to control Johne's on your dairy. R