UNABRIDGED VERSION

HEALTHY COWS FOR A HEALTHY INDUSTRY

Proven Practices for Johne's Disease Control and Prevention

MULTIPLYING

IGNORED

GROWING

FRUSTRATING

COSTING

LURKING

You can get ahead of Johne's

Healthy Cows for a Healthy Industry—Proven Practices for Johne's Disease Control and Prevention

Johne's disease has been lurking in dairy herds for years. Many producers believe it cannot be stopped and simply manage to minimize its effects.

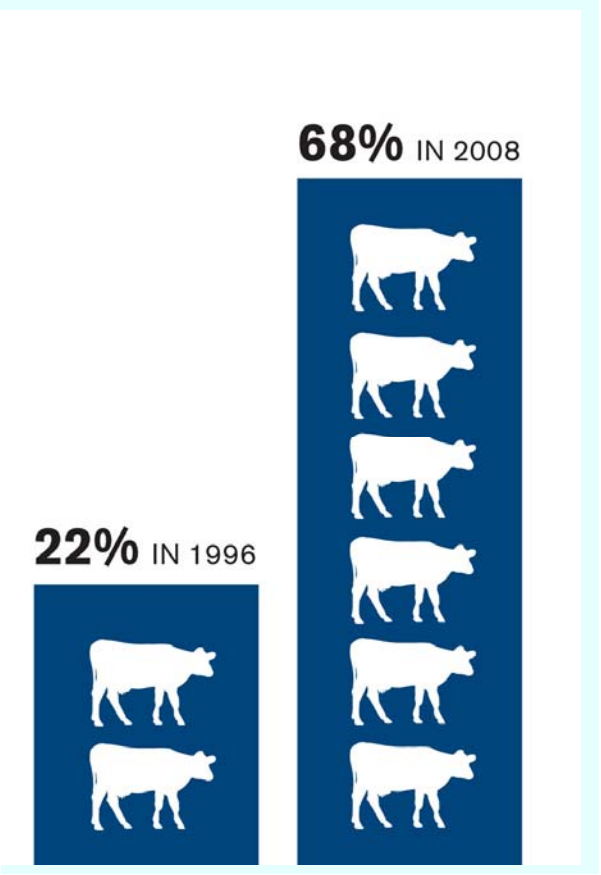
But Johne's disease prevalence continues to grow at an increasing rate. While there have been many theories and recommendations for controlling Johne's disease, there has never been a field study to prove how these theories work on actual commercial dairy operations.

Until now.

We are excited to share the results of a seven-year definitive study on managing for the control and prevention of Johne's disease, including practical and affordable application on various types of dairies. Nine dairy operations went through testing and supervised application of management protocols designed to control and prevent Johne's disease in the herd. Their stories are revealed in this special insert.

Johne's disease can and should be controlled now. In today's industry, as cows are bought and sold for genetics and to support herd expansions, ***it is our obligation to adopt the proven management protocols today that will ensure healthy cows and a healthy industry tomorrow.***

Let's work together to stop Johne's disease now. For a healthy industry for future generations.



Johne's Prevalence is Up Dramatically!

According to USDA, 22 percent of U.S. dairy herds were infected in 1996 with Mycobacterium paratuberculosis, the cause of Johne's disease. That number jumped to 68 percent in 2007. Among herds with 500+ cows, the number of infected herds is at an alarming 95 percent. Random sourcing for dairy replacements in expanding herds is a major contributor to this significant increase.

Cooperation in the search for answers, cooperation in the solution

By Michael T. Collins, DVM, PhD
University of Wisconsin-Madison

Multiple Wisconsin agencies have cooperated for decades on Johne's disease control programs. The "Healthy Cows—Proven Practices" demonstration herd project unveiled here is no exception.

Financial support for this project included the UW Industrial and Economic Development Research Fund, the Wisconsin Agriculture Experiment Station, the UW School of Veterinary Medicine, the Wisconsin Milk Marketing Board, the USDA-APHIS-Veterinary Services, and the nine cooperating dairy producers who paid for the required management changes on their farms and the sample collection from all of their cows for the past six years.

Other organizations also are supporting this work by co-sponsoring our industry communications outreach efforts to dairy producers, herd health professionals and everyone who plays a role in maintaining healthy cows for a healthy industry.

"The primary objective of the project was to prove that Johne's disease control in commercial dairy herds is both possible—and affordable."

— Dr. Mike Collins

It is a remarkable achievement that all of these partners have sustained the effort for so many years. The dairy farm families of Wisconsin, through the Wisconsin Milk Marketing Board (WMMB), are deserving of special recognition as the first group to commit support for this important on-farm demonstration project. And WMMB has continued co-funding support throughout the life of the project.

The primary objective of the project was to prove that Johne's disease control in commercial dairy herds is both possible—and affordable. There were also several bonus scientific findings that may be of interest to herd health professionals, including comparison of the accuracy of various blood and milk tests and a cost-benefit analysis of Johne's disease control programs in dairy herds. Those interested in these further results can visit our web site at http://johnes.org for more detail.

Johne's disease continues to be a persistant and growing challenge for everyone in the dairy industry. But through the cooperation and collaboration of multiple partners, we can all share the results of this seven-year on-farm demonstration study and help ensure the health of our cows and our industry. The team effort demonstrated by this project is the epitome of "The Wisconsin Idea," which is "translation of basic research into solution of every day problems important to the people and economy of Wisconsin, and beyond."

Why answer the call?

- ⇒ Johne's disease is a production-limiting disease. It costs money.
- ⇒ Johne's disease is an infectious disease. It is spreading and will continue to spread until we do something about it.
- ⇒ Diagnostic tests for Johne's disease are effective and affordable. In many states, Johne's disease control is state-subsidized.
- ⇒ Everyone in the dairy industry must be committed to assuring consumer confidence in the care we give to our animals and commitment we have to providing quality, wholesome dairy products.

Michael T. Collins
D.V.M., Ph.D.
Collins is a professor and researcher at the University of Wisconsin School of Veterinary Medicine in the Pathobiological Sciences Department. He headed up the seven-year *Healthy Cows — Proven Practices* demonstration herd project which included practical research from nine Wisconsin dairy operations. That work is captured in this supplement *Healthy Cows For A Healthy Industry.*

Vic Eggleston
D.V.M.
Eggleston is associate scientist and clinical instructor at the University of Wisconsin School of Veterinary Medicine in the Pathobiological Sciences Department. He was the project manager for the *Healthy Cows For A Healthy Industry.*

They proved you can do it

Despite increased awareness of Johne's disease, the negative impact it has on dairy farms continues to grow. Why? Many producers aren't aware that controlling Johne's disease is not only possible… it's affordable.

"With a myriad of management issues flaring up on a regular basis, concern about the prevalence of Johne's disease tends to fall below the radar," says Mike Collins, DVM, University of Wisconsin School of Veterinary Medicine. "The net result for the industry, unfortunately, is the continued spread of this disease."

Collins and his colleagues determined that the unchecked increase in the prevalence of Johne's required a field demonstration to evaluate a realistic control program. No Johne's disease study has ever evaluated an entire management and testing protocol on working, commercial farms. "As a result," Collins says, "battling the disease has been hit or miss, and the disease has been winning."

The widespread prevalence of Johne's disease will require an industry-wide effort to solve it, according to Collins. "The first step to an industry-wide solution is proving that Johne's disease control is both possible and affordable," he says.

A group of funding partners, led by the United States Department of Agriculture (USDA) and Wisconsin Milk Marketing Board, came together to initiate a long-term, on-farm demonstration. The project's purpose was to evaluate a testing and management protocol that would reduce the prevalence of Johne's disease within herds. In January 2002, the University of Wisconsin School of Veterinary Medicine began field trials on a Johne's control program in nine Wisconsin dairy herds.

All of the herds, ranging from 75 to 1,400 cows, were placed on the same control program, which included standard infection control management, a herd-testing strategy, culling cows with strong-positive blood tests (ELISA), and managing other test-positives to maximize production income for the producer but minimize chances for infection transmission.

"The management protocol and testing program we used with the herds had to be affordable and achievable," says Dr. Vic Eggleston, DVM, who supervised the demonstration project. "Our goal was to drill down to a set of effective management changes producers could make that, along with testing, could have real impact on the control of this disease."

A testing program for each herd was initiated as follows:

- Perform an ELISA on blood samples from every cow during every lactation.
- Record ELISA results in each cow's computer record.
- Label all ELISA-positive cows.
- Manage cows differently according to their ELISA results:

ELISA Result	Action
Negative	• Calve cow in clean maternity pen • Use colostrum
Low- to medium-positive	• Calve in segregated maternity pen • Discard colostrum • Consider not keeping heifer calf
Strong (high) positive	• Finish the cow's lactation • Do not breed back • Cull at dry-off for slaughter only

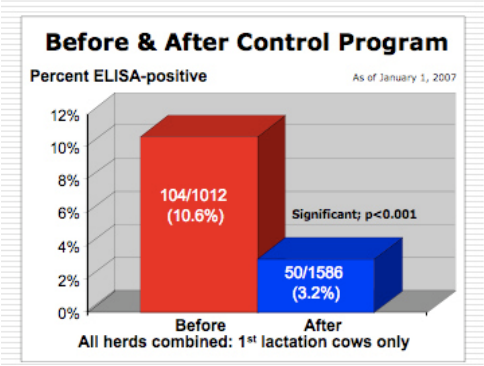
In addition, Eggleston collected herd DHI data and fecal samples. Herd owners were not given the results of the fecal samples to avoid culling bias. "We wanted the producers to make culling decisions based only on the ELISA tests," Eggleston says. "This allows us to evaluate the effectiveness of the ELISA as a testing tool."

The testing program was accompanied by a set of required management changes, which Dr. Eggleston supervised during regular farm visits. The changes included:

Maternity pen management	• Separate, clean pens for exclusively ELISA-negative cows • Never allow sick cows and ELISA-positive cows in "clean" maternity pens
Calf management	• Remove calf from cow as soon as possible, ideally within one hour • Feed four quarts of clean colostrum within four hours (three quarts for Jerseys) • House calves well away from the adult cattle
Colostrum management	• Use only colostrum collected from ELISA-negative cows • Take extra care to assure hygienic colostrum collection • Promptly feed or freeze colostrum
Calf care and feeding	• Feed only pasteurized milk until weaning, either milk replacer or on-farm pasteurized milk • Maintain good hygiene in calf rearing facilities and insure no manure contamination of feed and water

Effectiveness and affordability…
The prescribed management and testing protocol has produced several key results in the battle to control Johne's disease:

Prevalence in first-lactation heifers was significantly reduced…
All nine herds observed a significant reduction in ELISA-positive, first-lactation cows. Furthermore, the number of first-lactation cows that tested positive based on fecal culture was also significantly reduced in all nine herds.



Before the program started, 10 percent of heifers from all nine herds were ELISA-positive during first lactation. During the last 12 months of the program, only 3.5 percent of first lactation heifers tested ELISA-positive. In addition, the nine producers no longer saw clinical cases of Johne's disease in their herds.

"This impact is significant because the nine producers were not given the fecal culture results," Eggleston says. "Although the ELISA test does not detect all the cows shedding the bacteria *M. paratuberculosis* in their feces, and only the strong ELISA-positive cows are culled, use of the ELISA to detect the most infectious cows does aid culling and management decisions. As a result, prevalence of the infection can be decreased."

Data is currently being compiled on second-lactation cows.

The control program is affordable. "We set out to find a management and testing protocol that producers could afford to implement," Collins emphasizes. "Producers can expect to spend less than $10 per cow per year added expense for ELISA results on blood samples. The cost may become even more affordable if current studies reveal that the same results are possible by testing milk samples. In addition, the recommended management protocol is not expensive—it's a matter of making the necessary changes."

The affordability of this program is an important takeaway because producers may not be aware of the cost of allowing Johne's disease to perpetuate itself in the herd. Losses accumulate from decreased milk production, increased services per conception and decreased carcass value at slaughter.

"Weighing the cost of tolerating Johne's disease against an affordable and realistic control program, the control program wins," Collins says. "The nine participating herds demonstrate that fact."

The recommended herd management protocol has other benefits. "The changes evaluated in this field demonstration are essentially considered best management practices and are effective in controlling multiple pathogens transmitted from cows to calves by the fecal-oral route," Eggleston points out.

Taking a wider view, Collins says that using best management practices to prevent infectious diseases sends the message that our industry cares about our cows and about producing the best quality product. "Long-term, healthy cows are a key to a healthy industry," he says.

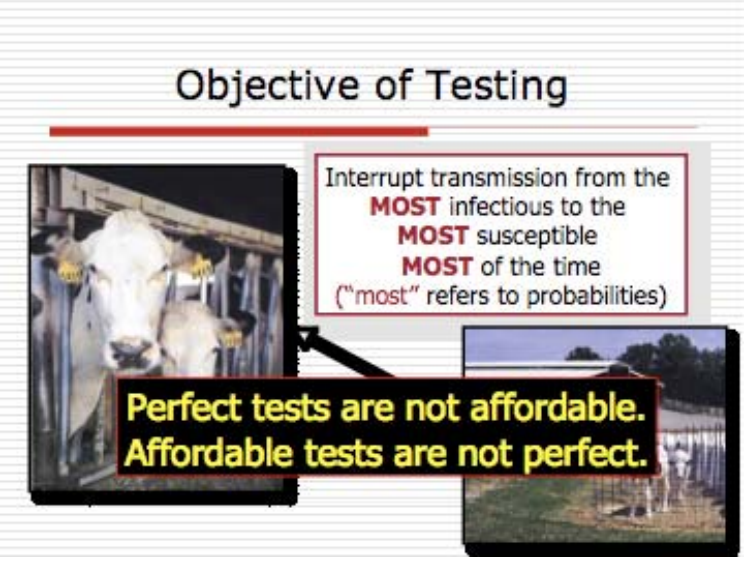
Cooperate and communicate…

The cooperative effort on the demonstration project was the first step in the long-term solution to controlling this disease, Collins says. "Now the industry must cooperate to spread the word that Johne's disease can be controlled, and that a serious control program is affordable."

Collins says that telling the stories of the nine participating herds distinguishes this study from other research. "We encourage dairy producers, veterinarians and other dairy professionals to see themselves in one of these herds," he says. "The herd sizes and management styles are varied, but the control program applies and gets results across the various herds."

Collins urges all dairy industry professionals–-producers, veterinarians, and other service providers—to tell these stories and help producers implement the control program.

"For healthy cows and for the health of our industry, let's implement these practices now," Collins urges.



The Johne's approach that worked

Producers have heard for years about the theories and recommendations for controlling Johne's disease. Finally, there has been a field study to prove how they work on real dairy operations.

Producers from nine Wisconsin dairy operations participated in a seven-year study on managing for the control and prevention of Johne's disease. In order to participate in this *Healthy Cows for a Healthy Industry* program, producers had to agree to the following procedures and management protocol.

> *"It is definitely a total program approach, and the beauty behind the program is that all of the procedures were easy and economically feasible to implement. The approach is very real world."*
>
> Ken Verhasselt of Verhasselt Farms, a 2,000-cow dairy in Freedom, Wis.

Johne's disease testing program – procedures:

- Establish the baseline infection prevalence using ELISA test and fecal culture.
- Beginning three months after baseline testing, start a regular Johne's testing program on the milking cows by collecting blood samples from all cows in the last third of their lactation. (Collecting and shipping samples were the producer's responsibility.)
- After receiving the blood test (ELISA) results, cull all cows that show a strong-positive ELISA test result (S/P ratio of 1.0 or greater using the IDEXX ELISA) before they freshen.
- Identify all Johne's ELISA-positive and suspect cows (preferably with a leg band or ear tag) to ensure that their colostrum will never be collected and used to feed newborn heifer calves.
- Identify a separate calving pen for Johne's ELISA-positive and suspect cows and clean pens thoroughly once cows are removed.

Herd management – protocol:

- Thoroughly clean teats of colostrum donor cows (only cows testing ELISA-negative) before collecting colostrum.
- For newborn calves, administer at least four quarts of test-negative colostrum (three quarts for Jerseys) within four hours after birth.
- Remove calves from the maternity pen as soon as possible after birth.
- House calves away from the adult herd and maintain good hygiene practices, ensuring manure does not contaminate feed or water.
- Feed calves only milk replacer or pasteurized milk after they are 24 hours old.
- Collect blood from lactating cows during the last third of their lactation.
- Cull all strong-positive testing cows before freshening.
- Visually identify all positive and suspect cows.
- Provide separate maternity pens for test-positive vs. test-negative cows.

Most new Johne's infections happen before weaning, making calf hygiene critical to preventing and controlling the disease. Calve cows in a clean pen, remove calves immediately from their dams, and raise them separately from the cow herd.

Blaser Farm
Ready to continue expansion

Johne's disease can have a devastating impact on even the best herds. Back in 1992, Blaser Farms Inc., had the highest rolling herd average of any freestall herd in Wisconsin. With 26,000 pounds of milk running through the tank, the Blaser family of Oconto Falls, Wis., was extremely proud of their 210 cows.

Everything was going great, but then the Blasers began a game of dominoes, where one problem led to another. "We decided to expand the herd in 1993 and build a new freestall barn," says Roger Blaser who owns the dairy with his wife Karen.

In hindsight, Roger believes this expansion started most of the problems at the Blaser farm. Some cows started losing weight, milk production dropped and profits were lost. Roger figures he opened the door to not only more cows, but also to Johne's disease. "Looking back at the symptoms, we realize that we brought Johne's disease in during expansion," says Roger.

It didn't stop there. Every year after 1992, despite excellent care and herd management, milk production dropped on the farm. And Roger truly believes that Johne's had a major impact on his rolling herd average.

Fixing the Problem…

The Blasers turned to their veterinarian and nutritionist for help with the herd health issues and lackluster performance. When solid rations weren't resulting in better milk production, the Blasers' concern grew and they expanded their investigation, looking for answers. "We heard about *Healthy Cows for a Healthy Industry* and wanted to see if the program could help us better control what was going on in our herd," adds Roger.

First Test Results

- 24 (8%) cows to cull
- 60 (21%) cows to discard colostrum

After testing the whole herd, the ELISA results showed that 13.4 percent of the herd tested positive for Johne's disease. "We were shocked with the numbers," says Roger. "We started second guessing everything and wondered what we were doing wrong."

However, the Blasers were told they were doing virtually everything right on the farm (from a Johne's disease perspective). "After inspecting the dairy," says Dr. Vic Eggleston, *Healthy Cows for a Healthy Industry* Project Manager/Veterinarian, we discovered that the Blasers had already implemented many practices to prevent the disease. Unfortunately, a few minor management holes had a major impact on this farm."

Following the protocol…

First, the Blasers had to cull all strong-positive cows. "We were short on replacements that year, so it was extra tough to see these cows and their heifers go," says Roger. "Even though it was painful then, it's definitely helped in the long run."

"This has been an incredible learning process. We are now able to better identify and control problems."
— Roger Blaser

The Blasers also were charged with changing their maternity area management. Their group calving was a problem area and a change was necessary. "We now separate all ELISA-negative cows and calve them in a different area. We are generous with the bedding in this pen, as well," states Roger.

At the beginning of the program, the Blasers were not testing for Johne's disease, and calves were receiving colostrum from their dams. Now, calves only receive colostrum from cows identified as test-negative. With not having enough good colostrum in storage, the Blasers turned to a colostrum replacer.

Attention to Details

- Pull a wet calf away from the dam quicker (immediately)
- Supply plastic boots for visitors and restrict certain areas
- Move calves to a different area on the farm – away from the older heifers and cows
- Cull all strong-positive cows
- Calve ELISA-negative cows in a separate pen; improve pen hygiene
- Use colostrum from only test-negative cows
- Identify cows differently from the rest of the herdmates based on test results
- Test all cows annually

According to Dr. Eggleston, the Blasers were in the early stages of a Johne's epidemic, and it has taken longer to reverse the rising prevalence trend. The herd also had a high percentage of strong-positive cows at the start of the program.

"The last ELISA test showed that 7.7 percent of the herd tested positive, a drop from the initial 13.4 percent," states Dr. Eggleston. "The Blasers are good, proactive managers. Everyone contributes to the effort, and their dedication to controlling this disease is evident."

Roger has seen definite improvements. When they first started the program, more than 50 percent of their cull cows were Johne's positive cows. Now that number is 10% or less.

In 1992, Blaser Farms had the highest milk production per cow of any freestall barn herd in Wisconsin. Johne's disease played a critical role in knocking this herd off its pedestal and also delaying a planned herd expansion.

Currently, with 510 cows milking an average of 22,000 pounds and things looking brighter for this Holstein operation, the Blasers hope to expand with more cows and build a new parlor within the next couple of years. "Not only did Johne's impact the herd's health and profitability, it delayed a planned expansion for the farm. We're behind schedule," says Roger.

With expansion plans back on, the Blasers also believe they are better armed when buying replacements. They always mention that they are on a Johne's control program and work with buyers to find cattle from a herd with a similar focus. They inform buyers that if they find Johne's-infected animals, they won't buy from that buyer again. "We had one source that supplied several animals that tested positive for Johne's disease," says Roger. "We haven't contacted that buyer again. It's been a challenge, but we have been able to secure a few successful sources."

This is good news, especially for the next generation of Blasers. "My children are involved in the operation, and we want them to succeed. We'll definitely continue testing – now we believe controlling Johne's is as critical to the herd as controlling mastitis," states Roger. "The program was easy to implement, and we encourage other producers to test and control Johne's disease. Economically, it's a no-brainer."

Ripp Farm
They underestimated their Johne's losses

Let's talk numbers. Before the Ripp family started the *Healthy Cows for a Healthy Industry* program, calf mortality ranged from 7 to 10 percent. Now, the Ripps lose less than 3 percent of their two- to 24-month-old calves.

Before the program, their rolling herd average was 24,000 pounds of milk. Now, cows at the Ripp Dairy Valley generate about 95 pounds per day for a 30,000-pound yearly average (3.7% fat and 2.97% protein).

"I never thought we'd be a 30,000-pound herd," says Chuck Ripp, who owns and operates the Dane, Wis., dairy with his brothers Gary and Troy. "Cows with Johne's disease don't milk. We know that now. Looking back, we were losing more to Johne's disease than we ever thought."

Before the program, the Ripp brothers tried to expand their herd; however, they had a hard time keeping cow numbers up. "It seemed like for every ten animals we would bring in, we'd lose at least two by the end of the lactation. With those kinds of numbers, it's tough – and expensive – to expand the herd," admits Chuck. "Now with 900 cows and a healthy reserve of replacement heifers, we can cull when we want to, not when we have to. We can be picky about who we keep. We even recently sold some Johne's-negative cows. That's a nice feeling."

How bad was the problem?

The Ripps always knew they had a Johne's disease problem. What they didn't know was how big it was. When their veterinarian told them about the Healthy Cows program, they figured they had nothing to lose. "We had more expansion plans in the works and wanted to get things under control," adds Chuck.

To be included in the program, 10 percent of the herd had to test positive for Johne's disease. When the Ripp's baseline test came back at 10.1 percent, Chuck was surprised that the number was that high but happy to know that they would become better informed and educated on controlling Johne's disease.

Tackling Johne's Disease…

Following the program's protocols, the Ripps had to make several management changes. They began separating and moving cows, keeping all positive-testing cows away from "clean" cows and calves. This separation effort also included the maternity area. They built two maternity pens and calved all positive-testing cows in one pen and negative-testing cows and first-calf heifers in the other.

After the baseline test, the Johne's-infected cows were labeled with a colored band in their ear. Using this system helps the Ripps and their employees identify where cows should calve and if they collect, test and store that cow's colostrum. "We only feed colostrum from negative-testing cows," claims Chuck. "We never give colostrum from positive cows or just-fresh heifers. And when we don't have enough colostrum, we turn to a colostrum replacer."

In addition, the Ripps starting separating all calves from their dams immediately after birth. "Before we started the program, we didn't pay nearly enough attention to this issue. We did what was convenient, not always what was best," admits Chuck.

The Ripps also recently added a pasteurizer to their farm. All milk goes through the pasteurizer before it is fed to the calves.

This veterinarian helped spearhead the effort

"Our veterinarian, Dr. Ross Maurer, did a good thing for our dairy," says Chuck Ripp. "He helped us focus on Johne's disease."

"It's fun to be part of a success story," says Dr. Maurer. "The goal was to see if a 'Test and Cull' program could work. It did on this 700-cow dairy. The Ripps were able to drastically reduce Johne's disease. The study also proved that basic good animal husbandry helps not only lower the prevalence of Johne's disease, but also other calf problems."

According to Dr. Maurer, a veterinarian's role should be to guide their clients, keep them informed on the latest Johne's information and help them implement a control program. "However, it's up to the producer to make a consistent effort to make the program work. The success of the program is only parallel to the producer's commitment. The Ripps are proof of that."

"Good management coupled with the use of a low-cost, less sensitive test works on Ripp Dairy Valley."

— Chuck Ripp

Testing details…

As part of the program, the Ripps began testing lactating cows about one month before dry-off. “At first, we didn’t necessarily believe the results and all cows testing strong-positive were immediately re-tested. What we learned was to trust the blood ELISA results – the strong-positive cows came back strong-positive again,” says Chuck. “It was extremely difficult when a healthy-looking cow producing 40,000 pounds of milk tested strong-positive. It almost killed us to cull that animal, but it’s been well worth it in the long-run.”

Currently, the Ripps are testing fresh cows on first test day using a milk ELISA test. According to Chuck, the milk test is the easiest, most cost-effective way for them to detect Johne’s disease. (For the Ripps, blood tests are about $6 per cow, while the milk test costs about $5.25 each.) Chuck feels they get accurate results with the milk ELISA test, and they get them back before it’s time to breed the cows. “With fecal testing, we would often have to wait two months to get the results. That’s too late.”

All cows testing strong-positive are labeled “DNB” (Do Not Breed) and all mildly positive-testing cows are labeled accordingly and are bred using cheaper semen. “We have discovered ways to manage these positive cows, allowing us to build up our herd, yet limiting their negative impact on the farm. We never freshen a strong-positive cow back – if she looks healthy enough, we’ll manage the rest of her lactation according to our new plan and then cull her at the end of her lactation.”

When they built a new calf barn in 2006, the Ripps were able to build the facilities to help them better manage Johne’s disease, plus improve overall calf health. Mortality rates have dropped from 10 to less than 3 percent.

Chuck believes that keeping things cleaner on the dairy has helped them in so many ways. “We have seen improvements in reproduction, production, cow comfort and herd health. We’ve been able to consistently maintain somatic cell counts at 150,000 to 180,000.”

Every year, the Ripps keep improving, and they are culling fewer cows. They ended the seven-year program with only 0.9 percent of the herd testing positive, down from 10.1 percent. For the last three years they have been a closed herd. “Due to the success of the program, we were able to bring up 120 replacements last year. We have been able to get cow numbers up, without buying cattle,” claims Chuck. “Being a part of this program has been a real eye-opener – it has really helped. Through careful management and attention to detail, we are controlling the spread of Johne’s disease and beating the odds.”

It’s not just about Johne’s

By Michael T. Collins, DVM, PhD

Controlling Johne’s disease essentially helps control many other infectious diseases such as *Salmonella, Cryptosporidium* and several viral diseases affecting young calves. These diseases can spread from cows to calves through manure, the fecal-oral route of infection transmission.

Overall, Johne’s disease control practices yield healthier calves–less mortality (dead calves) and lower morbidity (sick days). In other words, if a producer works to control Johne’s disease, more and healthier farm-raised heifers will be available as herd replacements or for sale.

Healthier calves lead to more productive cows. Research has proven that cows that are test-negative for Johne’s disease have higher lactation and lifetime milk production. And these cows have the least likelihood of producing *M. paratuberculosis* contaminated milk.

For all these reasons, Johne’s disease control measures are simply part of best management practices that should be followed on all farms regardless of Johne’s status.

The chart on the following page reflects practices recommended for preventing Johne’s disease which also are effective at controlling other pathogens that are transmitted from cows to calves via fecal-oral route, resulting in healthier calves overall.

Preventing Infectious Diseases or Pathogens on Your Dairy Farm

	Practices that will help prevent these diseases	Johne's Disease	Salmonella	E. coli	Rotavirus	Coronavirus	Coccidiosis	Cryptosporidiosis	BVD	IBR	PI_3	BRSV	Leptospirosis	Colostridial Disease	BLV	Mycoplasma	Contagious Mastitis	Foot & Mouth Disease
Visitors																		
	Disinfect boots before and after visit	x	x	x	x	x	x	x	x									x
	Wear clean clothes																	x
	Do not visit farms for 5 days after visiting endemic area																	x
Herd Health																		
	Vaccination	?	x	x	x	x			x	x	x	x	x	x				
	Testing	x	x						x						x	x	x	
	Quarantine arriving animals	x	x						x	x	x	x				x	x	x
	Segregation of infected and sick animals		x						x	x	x	x				x	x	
	Culling of chronically infected animals	x							x						x	x	x	
	Pest control practices used (flies, rodents, birds)		x				x	x					x		x		x	
	Individual plastic palpation sleeves and individual needles														x			
Calf Management																		
	Vaccination of dry cows and bred heifers when combined with good colostrum management			x	x	x												
	Calve in clean pen, remove calf ASAP	x	x	x	x	x	x	x	x									
	House individually, isolated from adults, in well ventilated area	x	x	x	x	x	x	x	x	x	x	x						
	Colostrum: Feed 4 quarts of good quality colostrum from test-negative cow within 6 hours	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
	Dip navel in 7% tincture of iodine or Nolvasan			x														
	Clean and disinfect feeding equipment daily		x	x	x	x										x		
	Feed milk replacer or pasteurized milk	x	x	x					x						x	x	x	
	Feed a coccidiostat						x											
Feed Management																		
	Dedicated feeding equipment	x	x	x	x	x	x	x	x									
	Disposal of feed refusals from adult cattle	x	x	x	x	x	x	x	x									
Manure Management																		
	Pens kept clean	x	x	x	x	x	x	x	x									
	Maternity pens kept clean	x	x	x	x	x	x	x	x									
	Maternity and youngstock areas kept at a distance from manure storage areas	x	x	x	x	x	x	x	x									
Milking Management																		
	Milkers use good milking practices															x	x	
	Teats are dipped after milking															x	x	
	Dry cow treatment given at dry-off																x	
	Regular maintenance of milking equipment															x	x	

Menn Farm
They wouldn't let Johne's disease win

The glass is half full at Lawn View Farm. More than seven years ago, owners Harvey and Jackie Menn received devastating news. Nearly half of their herd tested positive for Johne's disease. "It was such a blow," says Jackie Menn of Norwalk, Wis.

"Nobody likes Johne's disease." explains Jackie. "At first we were unsure of our future, wondering if we could survive." However, strong faith and a will to win kept the Menns going. They decided to look for help and come back swinging.

Reputable breeders can unknowingly sell animals infected with Johne's Disease. The Menns keep good records, and a review showed that cattle they purchased developed Johne's disease later.

Johne's History…

Back in 2001, the Menns had an opportunity to have their registered Jerseys tested for Johne's disease using the PCR test. They had their suspicions about Johne's because cows were losing weight, had diarrhea and were drying up early. A group of two-year-old cows seemed to have the most problems. At first, the Menns ran tests on some of these problem cows, and the results came back 100 percent positive. Then they checked the whole herd and were shocked when the results showed that almost 50 percent of the herd was infected.

Before and after calf housing shots: Calf health improved dramatically after the Menns moved their Jerseys from an indoor wood pen system to plastic hutches. They know that most new infections happen before weaning, so they heavily rely on good calf management and hygiene to prevent and control Johne's disease.

Trying to make sense of the whole situation, Jackie says they were able to dig back into their records and see that the group of troubled two-year-olds was the same group they had problems with as calves. "In 1998, we had a problem with standing water in the heifer pasture. A group of heifers became infected with *Giardia* and *Salmonella*. The calves got sick and we even lost a six-month-old heifer. We believe this same group also picked up *Mycobacterium paratuberculosis* from the rainwater run off. Every one of those animals from that group was gone before they reached four years old."

The Menns turned to a veterinarian friend who recommended they contact the UW-School of Veterinary Medicine for answers. That's when Dr. Mike Collins and the *Healthy Cows for a Healthy Industry* program surfaced. By January 2002, Lawn View Farm was entered in the program.

The Battle Begins…

The Menns met with the Healthy Cows team and reviewed the necessary management changes required for the program. The biggest change occurred with their calf housing. Before the program began, calves were raised in wood pens that were next to the gutters that also ran behind the cows. "Obviously, not a good set up," says Jackie. "Even before the program started, we knew we had to improve our calf housing."

Calves were not only moved away from the cow herd, but the Menns also moved them out of wood housing and into plastic calf hutches. Immediately, they noticed improved calf health. "Our Jerseys now thrive outdoors," says Jackie.

The Menns also designated two different maternity pens; one for Johne's positive cows and one for negative cows, which they keep extra clean. In addition, Harvey says they watch where they walk, wash their boots before going from the cows to the calves and heifers, and keep better records, tracking and monitoring all heifers out of dams who

tested positive. The Menns also are extremely careful where their calves get water from, and they don't feed colostrum from positive or even suspect cows.

As a registered breeder, the incidence of Johne's in their herd put an end to the Menn's marketing business. They stopped buying–and selling–cattle. "We had sold some cows just prior to testing," says Jackie. "When we found out about our epidemic, we immediately called and warned the buyers."

"We lost a lot of cattle, and it was tough to load them up," claims Harvey. "Not only did we lose cows, but we lost money on these thin cows because of decreased carcass value at slaughter."

Jackie agrees. "It's bad enough when you ship your cows, but it was even more disheartening when our children lost their good show cows, too."

The Menns believe in all of these management changes and plan to stay on top of the program, testing animals and culling all strong-positive cows and their offspring. (Through their records, the Menns determined that the majority of calves born to any strong-positive cow tested later as strong-positive.)

Sharing our story…

"More at ease." That's how Jackie describes how they feel today. The last ELISA blood test showed that the herd of 78 cows has made great strides in controlling Johne's, ending the project at 5.4 percent positive. "We're definitely pushing ahead and feeling good about our future," adds Jackie.

The Menns just started shipping organic milk and believe less stress on their cows (often associated with going organic) will help them continue to lower the incidence of Johne's disease within their herd. They also began selling registered cattle again. "We have been able to boost cow numbers in our herd and have sold some select cattle that have tested negative," adds Harvey.

Based on USDA surveys, owners of small dairy herds are less likely to be infected with Johne's disease. However, if the herd becomes infected it can cost the herd owner more on a per-cow basis to control Johne's. Menn's message: prevention pays.

"We wouldn't be here today if it wasn't for this lifesaving program," comments Jackie. "Our milk check is bigger, our cows are healthier and we're in this business for the long haul. Our goal now is to share our story and help other producers get serious about controlling Johne's disease. We're living proof that a control program is both possible – and affordable."

Don't buy your Johne's

by Michael T. Collins, DVM, PhD
Professor, University of Wisconsin-Madison

Five experts arrived at a consensus opinion on the subject of proper biosecurity practices to avoid purchase of cattle harboring a *Mycobacterium paratuberculosis* (cause of Johne's disease) infection. Their findings were published in the December 15, 2006, issue of the *Journal of the American Veterinary Medical Association*. For simplicity of use, the biosecurity plan was presented as a decision tree graphic.

The decision-making system involves a series of questions starting with *"Are USDA test-negative program herds available?"* Purchasing from such herds is clearly the safest way to avoid bringing infected cattle into a herd. If such herds are not available as sources of dairy replacements, then five other options can be consecutively considered; listed in order of increasing risk of buying infected cattle due to decreasing objective test data from the herd of origin. The main message is that herd owners **do have a choice.** They **CAN manage the risk** of buying infected dairy replacement cattle.

Ideally, purchasing decisions should be based on laboratory test data from the herd where the cattle were born and raised. Herd owners should control their risk by **having a biosecurity plan** (see your veterinarian).

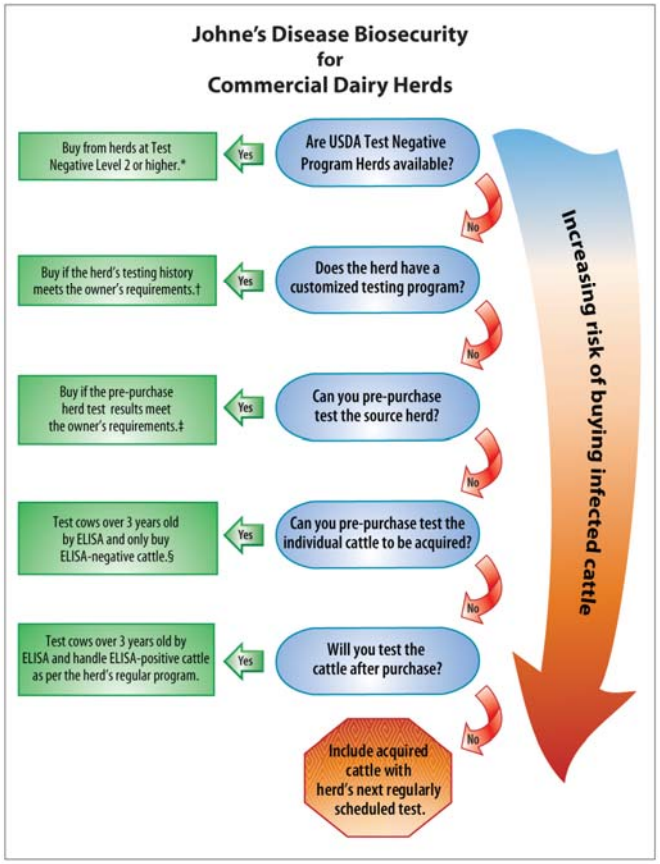
In the U.S. today, roughly 5 percent to 10 percent of random source dairy replacements are infected with *M. paratuberculosis*. That means 1 in 10 to 1 in 20 purchased cattle will not perform as expected in terms of milk production and herd longevity. If a producer buys 100 random source dairy replacements, there is a 95 percent chance that at least one of them is *M. paratuberculosis*-infected. Worse, depending on herd management practices, the infected replacements can infect calves born on the farm, destined to become herd replacements, thus amplifying the herd's Johne's disease problem. Purchasing an infected animal is not a "deal" at any price.

Are you in the Registered Cattle Business?

Every registered cattle breeder should participate in a serious Johne's control program. Eradicating the disease is essential to their future success. Question is: How many are using proper biosecurity measures to avoid buying–and selling–Johne's infected cattle?

"Registered cattle breeders should work to eradicate paratuberculosis from their herd using strategies that are more aggressive and consequently more expensive than those used for commercial dairy herds," says Dr. Mike Collins. "If you're marketing genetics, you should be controlling Johne's disease. Breeders have a moral and ethical obligation to sell livestock and germ plasma from disease-free animals, including freedom from paratuberculosis."

Dave Kendall, current Executive Secretary of the Milking Shorthorn and Brown Swiss Associations, agrees. Kendall once worked with a group of heifers that broke with Johne's disease. "We thought we had a BVD outbreak in one of the heifer groups until we started to post them," explains Kendall. "The cultures sent to Iowa State University confirmed Johne's disease."



Kendall is keenly aware of the financial losses due to Johne's disease and "strongly believes that buyers must be aware of the potential problems of not knowing." He suggests buyers only purchase cattle from herds that have a comprehensive testing, management and culling program for Johne's disease.

The American Guernsey Association takes it a step farther in the sales they manage. Every animal over 20 months of age is ELISA blood-tested before arriving at the sale. In addition, results are published if the cattle have fecal test results. Seth Johnson, Executive Secretary of the Guernsey Association, states, "We have been successful in encouraging producers planning a herd dispersal to do fecal tests on the entire milking herd before the sale."

Expansion and prevention…
Plain and simple…registered breeders should buy from herds or cattle dealers who sell animals tested for the disease. Not such an easy task, though. Most breed associations, such as Holstein USA, offer this statement in their recommended terms and conditions at public sales: "No animal is warranted to be free of Johne's disease." Some cattle dealers will also have a similar statement printed on their 'Bill of Sale', which they believe protects them from future litigation.

It is important to ask up front as to the status of the potential additions to your herd. If you are at a public sale or farm dispersal, ask the sale manager or consignor if they test for Johne's disease. Remember, you are only seeking information on potential purchases and not out to harm the seller. Do not be afraid to do your homework in advance. Some sellers will test on your behalf and expect you to pay the expense. Consider it a wise investment. Knowing that these additional cattle are not harboring the disease is one way to ensure that they can remain a vital part of your dairy operation.

What is the Best Test?
An Affordable and Successful Way to Test for Johne's Disease

by Michael T. Collins, DVM, PhD

How do diagnostic tests fit into a Johne's disease control program? Experts agree that it's prohibitively expensive to do a fecal culture or polymerase chain reaction (PCR) test on every cow. It does not make sense to spend more money to control a problem than the problem costs in the first place. However, this isn't the case for a chronic contagious infectious disease like Johne's disease. It is vital to look long-term (roughly a ten-year time frame) at cost-benefit of control programs, including diagnostic testing. Failure to recognize the infection in a herd and take positive actions to control it today will most likely mean a much higher herd infection rate and significantly higher cost to the herd in the future.

A low infection rate in a herd (<5 percent ELISA-positive) is not nearly as costly as a high infection rate (>10 percent ELISA-positive), which can and has put herds out of business. Therefore, the main message for commercial dairy producers is to immediately:

1) confirm if your herd is infected – if yes…
2) start an effective control program

We have learned from careful cost-benefit analysis that lower-cost, lower-accuracy tests like ELISA on blood or milk samples are more cost effective for commercial dairy herds than are higher-cost, higher-accuracy tests such as fecal culture and PCR (genetics-based tests). We also now know that it is not necessary to cull each and every test-positive cow from a herd. The new approach is to cull only the cows with a high-test result (strong positives) and to keep, but label and carefully manage, cows with low- to medium-level test results.

With this approach, producers can keep test-positive cows in the herd as income generators while also avoiding infection transmission. Of course, if herd owners want to be more hard-hitting in controlling Johne's disease, they can simply cull more aggressively, including cows with medium- or high-level ELISA results.

Use of low-cost quantitative tests coupled with culling only strong-positive cows before their next lactation was a key and novel aspect of the *Healthy Cows for a Healthy Industry* program. This field trial showed that this approach can affordably and successfully control Johne's disease.

ELISA-Based Management Decisions

Interpretation	Action
Negative	Keep for another lactation
Suspect	Keep – but do NOT use colostrum
Low positive	Keep (unless other reasons to cull) – but do NOT use colostrum
Positive	Cull (unless good reasons to keep) – but do NOT use colostrum
High positive	Cull at dry-off: **mandatory**

Verhasselt Farm
Watching cows isn't enough

Visual inspection… "Who were we kidding?" asks Ken Verhasselt. For years, the Verhasselts thought they could control Johne's disease on their farm by spotting symptomatic cows and culling them. Overly thin cows were pushed out the door. Mid-lactation cows with a sudden drop in milk production were sent away. Same for cows with chronic diarrhea.

The biggest lesson the Verhasselts learned from the *Healthy Cows for a Healthy Industry* Johne's disease control program was that visual inspection is not enough. "During the project, we had several good-looking cows test strong-positive," says Ken. "At first, it really hurt to see healthy-looking cows walk out the door."

Brothers Ken, Mike and Bruce Verhasselt and their families own and operate Verhasselt Farms, a 2,000-cow dairy in Freedom, Wis. They took over the farm from their parents Jim and Marilyn back in 1991.

Back in 2002 when they started the project, the Verhasselts did not have a systematic Johne's disease testing program in place. They figured they had a "small" Johne's problem and simply culled any cow that appeared to have the disease. They heard about the *Healthy Cows for a Healthy Industry* project from their county agent. Always interested in improving herd health and their bottom line, the Verhasselts applied to the program and the herd was baseline tested. Ken was shocked when more than ten percent of their cows came back with an ELISA-positive test and four percent of the herd tested strong-positive.

"When we got accepted, we blood tested and fecal cultured the whole herd," says Ken. "The incidence of infected cows was much higher than we anticipated. We had to cull 51 cows immediately."

> The first ELISA test showed that the Verhasselts had to discard colostrum from 549 cows, almost 40 percent of the herd.

Prior to testing, the Verhasselts agreed to follow all steps of the program. That meant eliminating strong-positive cows. That also meant that the Verhasselts had to store and feed colostrum from only test-negative cows. "Before the program, we just gave each calf the colostrum we collected from its dam," says Ken. "We also had a group calving pen. Now, we switched to individual calving pens to avoid cross contamination. In addition, calves are immediately pulled from their dam and placed in an isolated calf pen. Before, we thought we were doing a good job if we pulled the calves within an hour or two."

Ken believes all of these steps have made a huge difference. "It is definitely a total program approach, and the beauty behind the program is that all of the procedures were easy and economically feasible to implement. The approach is very *real* world."

As part of the program, the Verhasselts had to blood-test all cows once a year. They will continue to follow the routine, testing cows 30 days after calving. "When we first started the program, we pulled blood samples prior to dry-off," states Ken. "Now we're testing 30 days post-calving when cows are more stressed. We determined that we can catch more positive cows this way. Plus, we save money not breeding these cows back."

The Verhasselts also believe they are saving money in the parlor. Prior to testing, they labeled mid-lactation, low-producing cows as "poor performers." They often pointed the finger at post-fresh issues and would dry these cows off early hoping for a better lactation next year. After going through the program, they discovered that the majority of these "poor performers" were Johne's cases and there is no positive future for them. They now cull these cows and concentrate on the healthy, hard-working cows.

Overall calf health has also improved on the farm. When the *Healthy Cows for a Healthy Industry* team first called on this dairy, too many calves were being treated for health problems. The program required certain management changes that have solved multiple problems. "Calf health is excellent on this farm now," states Dr. Mike Collins.

Lessons Learned about Expanding

As a growing dairy farm transitioning from a father to three sons, herd expansion added fuel to the Johne's disease fire. Throughout the program, the herd grew from 1,400 to 2,000 cows. That same growth provided a bigger inlet for Johne's. The Verhasselts now do more background checking on cattle before they buy them. However, Ken says there are not enough herds testing for Johne's disease. "We definitely prefer to buy from a herd that is testing, but it's been tough to stick to that objective."

"The last replacement heifers the Verhasselts bought had a lower test positive than the home-raised heifers," says Dr. Vic Eggleston, *Healthy Cows for a Healthy Industry* Project Manager/Veterinarian. "Expanding without Johne's disease is possible, but producers have to do their homework and find reliable sources to work with."

The Verhasselts are excited about the farm's future. After being on the program for six years, just 3.6 percent of their herd is now infected, according to the last round of ELISA blood tests. "We feel we have the tools, knowledge and passion to control this disease," adds Ken. "It's very important as the third generation of Verhasselt dairy farmers become more involved in the operation. We want this family farm to not only survive, but to thrive. Controlling Johne's disease has had a major positive impact."

Maternity pen management was the biggest challenge on this large herd. The Verhasselts tried multiple methods to quickly and effectively separate the cow from her calf. In their most recent facility upgrade, they built individual maternity pens.

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Hayden Farm
The Goal: Eradication…plain and simple

A Johne's disease certification program can help identify sources of cows that are free of, or at low risk of, having Johne's disease. As part of the Wisconsin certification program, herds are classified A, B, C or D, with Class A herds having zero test-positive animals. For brothers Bob and Tom Hayden of Hayden Holsteins, Elk Mound, Wis., the goal is to get an A on this test!

Bob and Tom co-own and manage the family's 95-cow herd. "Eradication of Johne's disease," states Bob. "Plain and simple. We now cull anything testing positive."

"The Haydens definitely are aggressive," says Dr. Vic Eggleston, *Healthy Cows for a Healthy Industry* Project Manager/Veterinarian. "This herd could easily become Johne's free."

The Haydens have instituted an aggressive program to cull cows that test positive for Johne's disease, along with a reliable identification system, which includes tagging calves shortly after birth.

Back then…

In 2000, the Haydens had a sick cow and they couldn't figure out what was wrong with her. She had signs of pneumonia, plus loose stool. "We decided to test her manure and it came back positive for Johne's disease," recalls Bob.

Bob and Tom Hayden are taking on Johne's disease and trying to eliminate its grip on their herd.

That's when the Haydens decided to test the milking herd and "we discovered a problem," says Bob. "While we started culling positive cows and looking for ways to control the disease, our veterinarian gave our name to Dr. Mike Collins at the University of Wisconsin-Madison."

Dr. Collins states, "The Haydens identified the problem and immediately took action. They were already proactively culling test-positive cows prior to their *Healthy Cows* baseline test."

At the time, the Wisconsin dairy producers kept some of the low-positive-testing cows until they could build up their herd. They calved those cows in a separate area, fed the calves colostrum from negative-testing cows and then eventually culled the positive cows after their lactation.

"These owners provide great calf care," says Dr. Eggleston, "and this resulted in good calf health, which resulted in ample numbers of heifers to use as replacements, allowing aggressive culling of test-positive cows. Controlling this disease is high on the Hayden's priority list and they can now eliminate any positive-testing cow."

Along with testing and culling, the Haydens also began to concentrate on improved calf health. They built a new solar shed as part of their Johne's control program, providing a better and cleaner place to raise calves. "We used to raise calves in the main barn," says Bob. "As part of the program, we started separating calves immediately from their dams and moving them away from the adult herd. Calves now are raised on a quality 20/20 milk replacer in individual pens in the solar shed."

The Haydens also made changes to their maternity pen management. "We now have three maternity pens so cows can calve in an isolated, clean area," says Bob. In addition, the Haydens instituted a reliable ID system using colored ear tags and tagging calves shortly after birth. According to

To keep newborn animals protected from infection at Hayden Holsteins, calves are born and raised in a clean environment and fed a quality milk replacer. This new solar shed was added as part of the Johne's disease control program.

Bob, the new identification program has many side benefits, including allowing the family to dig up past records.

Positive results…

Well on their way to becoming Johne's disease free, the rolling herd average at Hayden Holsteins has increased significantly and there is more milk in the tank, adds Bob. "Plus, it's been a really, really long time since we saw a clinical case of Johne's."

The Haydens will continue to ELISA blood test their herd and have trust in the control program. For them, eradication is a big – but reachable – goal.

What you can do…
How can the *Dairy Industry* Tackle Johne's Disease Head-on?

by Michael T. Collins, DVM, PhD
Professor, University of Wisconsin-Madison

Registered Breeders

- Document if your herd is low-risk for paratuberculosis. Breeders have a moral and ethical obligation to sell livestock and germ plasma from disease-free animals, including freedom from paratuberculosis (Johne's disease). Herd owners should take positive steps to verify if their herds are not *M. paratuberculosis*-infected and should seek official government designation as being at some level (designated 1 through 4) in the Voluntary Bovine Johne's Disease Control Program. See the USDA website for detailed information. http://www.aphis.usda.gov/animal_health/animal_diseases/johnes/intro_herd-list.shtml
- If found to have an infected herd, breeders should work to eradicate paratuberculosis from the herd using strategies that are more aggressive and consequently more expensive than those used for commercial dairy herds.
- Encourage breed organizations to phase in rules to limit the likelihood that infected cattle are traded in breed association-sanctioned sales. Police yourself–do not wait for the government to police you.

Commercial milk producers

- Use Johne's Certified Veterinarians; they provide accurate, up-to-date information and recommendations.
- Request that your Johne's Certified Veterinarian conduct a herd Risk Assessment and Management Plan (RAMP).
- Train all farm employees to follow the management plan consistently and conscientiously.
- Specify that all Johne's test-positive cows be sent only to slaughter.

Veterinarians

- Become a Johne's Certified Veterinarian. This task is easily and affordably done by online training programs http://vetmedce.vetmed.wisc.edu/JDVCP/.
- Educate your clients about Johne's disease.
- Encourage all dairy herd clients to have a Risk Assessment and Management Plan (RAMP) conducted for their herds, file that RAMP with the appropriate state's Johne's Disease Coordinator (DJC) and update it annually.
- Establish long-term, consistent, cost-effective Johne's disease control programs for client herds with moderate to high infection rates, i.e. >5 percent adult cattle ELISA-positive.

Milk processors

- Encourage all herds supplying milk to know their Johne's disease test status and have a RAMP in place.
- Offer financial incentives to owners of test-negative herds. For example, consider paying for the costs of testing herds annually or consider offering premiums for milk from test-negative herds.

Cattle dealers and sale barns

- Be part of the solution, not part of the problem; move Johne's disease test-positive cattle ONLY to slaughter.
- Merchandise only test-negative cows or heifers from test-negative herds.

Educators

- Teach dairy students and producers to be proactive about Johne's disease control, which includes determining if a herd is infected then seeking qualified veterinary advice and implementing the right control program.

Dairy industry

- Promote market driven systems that encourage Johne's disease control. For example, breeders should adopt regulations to only trade animals that come from test-negative herds, dealers should only trade test-negative cattle, buyers should pay a premium for test-negative cattle from test-negative herds, and processors should offer producers financial incentives to partially compensate them for implementation and operation of a Johne's disease prevention and control programs.
- It takes everyone involved in the marketing chain, from farm to processing, to guarantee a positive future. Let's continue to share ideas, resources, experiences and solutions.

Breunig Farm
Their expansion brought on Johne's

It's a common problem for expanding dairies. Buying additional animals means Johne's disease can enter the herd. And it did at A-OK Dairy.

Mark Breunig, owner of the Sheboygan Falls, Wis., dairy operation, keeps meticulous records. He tracked their Johne's problem back to a group of heifers they bought while expanding their herd from 60 to 400 cows.

"Before we expanded," explains Breunig, "we were pretty much a closed herd. We never had Johne's problems or saw any signs of the disease."

That all changed when the Breunigs built a new barn in 1995 and started adding cows. They began noticing problems and suspected Johne's disease as the cause. Then some cows broke with clinical signs, and Breunig knew they had to do something.

"The timing was right," says Breunig. "We found out about the Healthy Cows program and knew it was a good fit."

Wasn't ignoring Johne's…

The Wisconsin producer had already instituted a Johne's control program, which included annual testing, using only test-negative colostrum and immediately removing calves from the maternity pen. Excellent animal identification and comprehensive computer records also aided their control program.

But something wasn't working. The Breunigs had a cull rate of 41 percent that year, and they knew that Johne's disease was one of the reasons for the high cull rate. Records later showed that 60 of the 167 culled cows linked directly to Johne's disease.

"When the program started, the biggest change we made involved our maternity pen management," states Breunig. "We used to have calving pens right by the holding area. For the program to be successful, we had to move the maternity pen away from this common area and emphasize the importance of cleanliness. Now we calve our Johne's-negative cows in a different, clean area."

The Breunigs identify each cow according to her Johne's status by placing a color-coded strip in her ear tag. Employees check the strip color and determine where the cow calves, if her colostrum is collected and if she gets bred back.

According to Breunig, the dairy also lacked a detailed action plan. "The cows testing positive or showing critical signs just left. We didn't have a plan after that. We were looking for help to make the best possible decisions as we worked our way through this disease."

Breunig really appreciates the decision-making protocol he received as part of the Healthy Cows program. He now goes through the ELISA test results and makes culling and management decisions based on an established plan of action designed to effectively and affordably eliminate Johne's. "We probably culled more heavily than we needed to before the Healthy Cows program. We didn't have a strategy in place. In hindsight, we shipped a lot of cows that we now know we could have managed more effectively."

When the Breunigs first started the program, 29 cows showed strong-positive results. These cows were culled at the end of their lactation. It was tough to see some of those cows go, says Breunig. "In the long run, it definitely has helped us though. We truly believe that every little detail about the program puts us more in control of our future."

Test	Before	After
ELISA	13.4%	3.4%

Cutting their infected percentage down to 3 percent, things are looking A-OK on the Breunig farm. The combined efforts of scrupulous management and better-defined culling decisions have made this dairy more profitable. “I can’t remember the last time a cow broke with clinical Johne’s,” comments Breunig. “We have enough healthy replacements to fill the barn and have much more flexibility when culling.”

The program works. “It’s been very successful for us; and the really good news is, it didn’t cost much to implement,” claims Breunig.

Feider Farm
Now we stick to the plan

Chuck and Julie Feider believe in educating the community about the importance of dairy farming. They try their best to keep their place clean and photogenic, and routinely host farm tours. Their son, Tim, and his wife, Angie, have hopes to run the operation one day. Doesn't everyone want to see this farm family succeed?

Not Johne's disease. This awful infection has been creating havoc for the Feiders. Initial ELISA blood test results showed that 16.3 percent of the New Holstein, Wis., herd was infected with Johne's disease. As part of the Healthy Cows program, Chuck and Tim were told to cull 17 strong-positive cows and discard colostrum from 56 cows. At first, they were skeptical and thought they could get another lactation out of the highly infected cows. "Bad idea," says Chuck. "These cows did not make it through another lactation. They all eventually went to the wayside."

Keeping strong-positive cows only delayed the Johne's disease control program at this 220-cow dairy. Chuck and Tim are now big believers. "We stick to the plan and know that keeping strong-positive cows to get one more calf is a bad idea," add Chuck.

Not that hard…

Dr. Vic Eggleston says the Feiders were already committed to many of the management details needed to control Johne's disease. They were using individual calving pens prior to the start of the project; however, they weren't testing to identify positive cows. Since they didn't know which cows were *M. paratuberculosis*-infected, Chuck was using colostrum out of all of the cows.

According to Chuck, the management changes they made were "normal stuff–things every producer should be doing," he says. "After testing, we separated the positive cows from the negative cows for calving, and only utilized colostrum and milk from the negative-testing cows. The management changes weren't that hard to implement, and we saw an improvement right away with overall herd health."

Good for the industry…

The Feiders really appreciated going through the Healthy Cows program. "It was great to participate. Everyone should have this kind of opportunity. It's important for the industry," claims Chuck. "Too many producers blow off this problem. They think it will go away. It won't."

Going from 16.3 percent positive to 6.3 percent was exciting for Chuck and his family. "We wanted to see how we could improve," adds Tim. "The results have been encouraging, and we will continue to test."

Other things the Feiders learned:

- Consistent testing, plus culling all ELISA strong-positive cows works.
- Not all Johne's cows are thin. A Johne's positive cow may look healthy.
- One feeding (four quarters) of high-quality colostrum is enough.

Cow #4 tested ELISA strong-positive, surprising considering her healthy condition. A successful Johne's disease control program is a long-term investment that takes commitment–and the ability to stick to a plan.

The Feiders only wish that the whole dairy industry could get more educated about Johne's disease, like they did. "The industry really needs to step it up and commit to this program, for our future," concludes Chuck.

Bower Farm

Johne's put their registered cattle business on hold

Tim Bower of Rolling Meadows Farm had a dream while growing up. He wanted to be part of the 230-cow family dairy operation and turn it into a showplace for prominent registered Jerseys. “I have always wanted to show a cow at World Dairy Expo,” claims Tim.

Growing up, Tim started showing Jerseys at the county fair. “We put a trophy case in the milk house to feature our awards.” The cows were winning and capturing honors, and the herd looked promising. Even the American Jersey Cattle Association came out to set up a classification program. “We were excited about our cows – and our future,” says Tim.

Then, in the fall of 2001, Tim and his family noticed one cow had chronic diarrhea. “She went off feed and started losing weight fast,” says Tim. “No one could figure out what was wrong with her.”

Then a second cow came down with the same symptoms. Tim’s Dad, David, decided to test for Johne’s disease. Both cows tested positive.

At the time, Tim was in school at the University of Wisconsin-River Falls. “I had all the resources I needed to research this awful disease. I even contacted Dr. Mike Collins in hopes that he could help.”

That’s when the Bowers heard about the *Healthy Cows for a Healthy Industry* program, which was in its initial stages of setting up and finding Johnes-infected herds. “We were definitely interested in participating in the program,” says Tim. “We wanted to find some answers to our Johne’s questions, plus we knew we had to do something if we ever wanted to take our herd to the next level.”

The Bowers are very appreciative of this Johne’s disease control program and the support it received from the Wisconsin Milk Marketing Board, UW-Madison and USDA. *“It’s one of the best things these organizations could have done for the dairy industry,”* states Tim.

Dr. Collins and Dr. Vic Eggleston came out to test the whole in March 2002. They pulled blood, milk and fecal samples. By June, the Bowers officially started the program. The group talked about specific management changes that were required to participate in the program– changes the Bowers listened to carefully and were anxious to incorporate into the operation.

“We immediately culled cows testing strong-positive, made changes to our maternity area and modified our colostrum management,” adds Tim. The Bowers had to identify a separate pen for only ELISA-negative cows to calve. Also, during the initial stages of the program, they switched to a colostrum replacement. Initial test results showed the Bowers had to discard 40 percent of the herd’s colostrum. That equaled more than 100 cows at the time. After they identified enough ELISA-negative cows, they only kept and fed colostrum from those cows.

The sign says Registered Jerseys. However, the Bowers stopped registering cattle almost seven years ago when Johne’s disease hit the 230-cow herd.

During this initial phase, the Bowers also determined that they brought Johne’s disease into the herd when they bought cattle during their expansion years. “Several of the cows that were brought in tested positive,” says Tim. “We’re now a closed herd and will not buy cattle anytime soon. First, we need to finalize our biosecurity plan and focus on quality, not quantity.”

Are Jerseys Different?

Tim thinks that Jersey cattle react differently than other breeds to Johne’s disease. “If infected with Johne’s disease, our cows quit eating and within a short time, you’d see a carcass,” Tim explains. “However, a Johnes-infected Holstein will often go on eating but will become skinny over time because all the feed eventually goes straight through her.”

According to Tim, the younger Jerseys showed more clinical signs than the older cows, and he noticed bigger milk production losses from the younger cows, too. “We were definitely losing out on milk from the infected cows. This disease has had obvious affects on our income.”

Adding to their problems, the Bowers also found out they had copper toxicity issues, a problem that hits Jersey cattle harder than Holsteins, says Tim. The copper poisoning first showed up in the Bower's calves, wiping out the strength of their future herd. It then moved to the milking string, and the Bowers ended up with dead cows. In addition, any calves born from the affected cows had a greater risk of having a depressed immune system. These additional herd health problems really slowed any progress they were making from the *Healthy Cows* program.

"Johne's control moves much more quickly when other animal health issues are under control," agrees Dr. Eggleston.

These trophies represent the past at Rolling Meadows Farm. Johne's disease had a major impact on this 230-cow herd, putting the registered and showing business for the Bower family on hold.

Future Looks Much Brighter Now…

Seven years later and the Bowers are back to dreaming big. "We've turned things around," says Tim. "We now have enough negative-testing cows to supply quality colostrum. Calf health is better. The cows look stronger. And we're on our way to being Johne's free.

"After we ran into all these problems, we quit registering the herd," adds Tim. "Our focus was 100 percent on improving herd health. We never stopped keeping records though. Now, we're excited about getting back into the registered cattle business and will be contacting the Jersey Association soon to use their genetic recovery program."

With an optimistic grin, Tim figures they have made big strides on what he knows will be a long road ahead. "We lost most of our best cows. Now, as a closed herd, it will take us a while to breed back some strength into our herd. But, we're definitely on the right track. We'll keep improving. This disease slowed us down, but one day we will have a herd of Johnes-free, highly marketable registered cows."