Johne’s can be managed

Four years into an aggressive management, test and vaccination program, the Steins see tremendous progress

By Paula Mohr

Editor’s Note: It has been a long, costly journey with Johne’s disease for Stein Farms, a 650-cow dairy in western New York. DAIRY TODAY readers first learned about the Steins’ five-year Johne’s eradication plan in the November/December 1997 issue. Each year, we’ve provided updates. This is our fourth feature on the farm.

A family partners and employees of Stein Farms tentatively focus day in and day out on a stringent hygiene-management, test and vaccination protocol for Johne’s disease eradication, they sometimes overlook the dairy’s tremendous progress over the last four years.

Reckoning time in November of each year gives them pause, however. Cornell University Johne’s disease specialist Christine Rossiter visits the herd and obtains fecal samples on all animals, now numbering 700 head. And four months later when the fecal test results come in, they see the payoff on paper and they celebrate.

This past year was particularly enlightening as the Stein crew saw hard numbers validate their efforts. They were able to compare groups of nonvaccinated and vaccinated cattle for the first time. Of 191 vaccinated 2- and 3-year-olds, only 8% tested positive for Johne’s. A year earlier, 28% of 181 nonvaccinated 2- and 3-year-olds tested positive. Overall, 31% of the herd was positive for Johne’s in 1998; in 1999, that figure hit 20%. “The data show our protocol is working,” Shelley Stein says. “When we got those results back, we celebrated! We’re so buried and immersed in it that we often don’t see the big picture.”

Stein Farms, which includes brothers Dale, Ken and Ray, and their families, as well as 13 employees, have instituted numerous changes in farm management to control Johne’s. They immediately separate newborns and dams and feed calves colostrum from Johne’s fecal-negative cows. They keep youngstock and mature cows separated. Heifers do not consume refused cow feed. They use separate equipment for feeding and manure handling. They keep Johne’s-positive cattle in a separate group that doesn’t get bred back, and they milk them last.

As an extra precaution, state veterinarian Crickett Johnson-Seward visits every three weeks to vaccinate all animals less than 35 days old with the Mycopar Johne’s vaccine. But the biggest and least expected change of all happened among the people who live and work on the dairy. Teamwork and communication blossomed, despite the gloom cast by Johne’s. Everyone, in his or her own

SHELLEY STEIN says, “When we got those results back, we celebrated! We’re so buried and immersed in it that we often don’t see the big picture.”
way, was determined to help lick the disease. “We are so full of hope and knowl-
edge now, that we couldn’t have imagined this four years ago,” says Shelley, 
Ray’s wife. “We learned that sharing the ‘why’ and ‘how’ to battle Johne’s 
empower the staff. When we shared 
accomplishments in the reports from Dr. Rossiter and Dr. Seward, 
employees brainstormed with us for a better understanding and for 
ways to implement strategy.” Shelley adds that the two veterinarians 
helped foster that can-do attitude.

“The constant empowering spir-
it is infectious on the farm level,” Shelley says. “We believe more in ourselves 
and in the work we’re doing to refocus our farm and make it vital once again.”

To this Rossiter adds: “It would be great if every producer could have the 
can-do, open attitude like the Steins have. By starting a Johne’s disease plan, 
lots of things can happen when you work together.”

With the last whole-herd fecal test results in hand, the Steins can compare 
and see what changes have helped and where. Most noticeable is the impact of 
hygiene improvements on vaccinated cattle. When they started vaccinating 
against Johne’s in January 1997, the Steins didn’t have all of their revised 
management practices in place. For several months, they still fed colostrum 
from all dams and they fed bunk refusals from the milking herd to youngstock. 
So animals vaccinated in the first eight months of 1997 didn’t benefit from the 
full Johne’s eradication protocol. After September 1997, the program covered 
all vaccinated animals.

Of all the animals vaccinated in 1997, about half of them did not benefit from 
management changes. Of 191 vaccinated cows tested, 8% (three cows) were 
feccal-culture positive. No vaccinated animals raised under the full Johne’s 
control protocol have tested positive. The Steins’ goals was to have no 
first-calf heifers culled for Johne’s in 1999. They succeeded in meeting that 
goal. Throughout the herd, Johne’s test numbers have been decreasing. In 1997, 
they culled 12% of the herd for Johne’s. Last year, they culled 7%.

While the Steins work to clean up Johne’s, other positive changes have 
occurred in the herd. Two-year-olds perform better right after freshening and 
are ready to milk. They average 21,000 lb. milk and weigh 1,250 lb. to 1,300 lb. 
after calving. Before, they weighed about 150 lb. less and produced between 
18,000 lb. and 19,000 lb.

Incidence of metabolic diseases is low. They freshen about 50 to 55 cows a 
month and, for the past three years, have maintained less than a 1% incidence of 
milk fever, ketosis and displaced aboma-
umus, and a 3% incidence of retained placenta. They credit the high-forage 
ration with improving overall health of the cows. And they’ve stayed on top of 
foot health by having the hoof trimmer visit every three weeks and maintaining 
foot baths daily.

“Our herd vet called to ask if we had 
changed to another vet clinic because we 
no longer called him for these prob-
lems,” Shelley says. “With the protocol, we’re getting a major bang.”

Their whole herd cull rate for the 
year hovers around 23%, which includes voluntary and involuntary culls. “We 
lose very few cows to clinical Johne’s now,” Shelley says. “We’ve learned to 
movem them out sooner so we get some value out of their carcasses.”

The Steins’ next round of fecal testing 
was set for November. When they 
get results back four months later, 
they’ll mark positive cows as “do not 
breed.” To circumvent the problem with 
dated test results, the Steins spend ex-
time and money to have every cow 
fecal-tested again 120 to 150 days into 
her pregnancy.

“With the fresh test results, we can make timely decisions about the calf,
colostrum and cow,” Shelley says. 

Even though the fecal test is the most 
reliable Johne’s test available (with a 98% accuracy), the Steins have learned to 
interpret results specific to their own

herd and feed management. They know 
that 75% of their tested cows with a 
colon-forming unit (CFU) of 1 will be 
negative on the next fecal test, and 25% 
will later exhibit clinical signs of Johne’s. Cows with a CFU of 2 or greater will 
end up with clinical Johne’s 75% of the time, and 25% will revert back to zero 
or negative.

R ossiter adds that other herds, on av-
erage, may see more than 50% of their 
animals with 1 CFU test negative sub-
sequently, and 25% may progress onto 
higher CFU counts or become clinical. 
She defines fecal culture results as follows: few (1 to 30 CFU per 0.1 g feces), 
moderate (31 to 299 CFU), and many (more than 299 CFU).

“We firmly believe that nutritional 
stress plays a large role in the fecal test 
result in the same cow,” Dale says. Three 
years ago, they switched from a high-

A high-forage diet allows cows’ rumens to work by design,” Dale says. 
It creates a mat of forage, allowing for maximum use of nutrients. Cows aren’t 
at borderline acidosis constantly. The high-forage diet is less stressful on the 
cows, and less stress seems to lower clinical expression of Johne’s.

The year 2001 is the last year for the 
Steins’ Johne’s disease control and erad-
ication program. Come January 2002, 
the pilot program that Rossiter helped 
design will be over. Chances are good 
the Steins will continue to vaccinate the 
herd on their own.

“Until we completely vaccinate the 
herd, there will always be 1% or 2% 
that slip through the cracks,” Dale says. 
Even with vaccination, eradication is 
not 100%. But when you use it with 
management, it’s pretty darn good.”

The Steins had a significant prob-
lem when they decided to investigate 
Johne’s, Rossiter points out. Johne’s is 
all around. If we would pay attention to 
it early on, we could manage it like 
other familiar health problems, such as Staph. mastitis.”

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STEIN TIME LINE

- **2/96** Started "team"
- **1/97** Colostrum mgmt
- **4/97** High-forage diet introduced
- **10/97** Bought 100 Canadian hfrs, healthier herd
- **11/98** Started monthly testing 1st of 610 vac hfrs calve
- **1/99** Test 2
- **11/99** Test 3
- **10/00** 1,000 calves vaccinated so far
- **11/00** Test 5

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