

Trial and Error Recipe for Calf Success at Spruce Row Farm

Dairy farms across the country are as varied as their herd size; no two are exactly alike. As such, there is no panacea for problems either. What works for one dairy to resolve an issue may not work for another. Often, it takes tinkering and experimenting to find solutions.

Such was the case with the calf management program at Spruce Row Farm Inc., owned by Jeff and Janet Peters and their grown children, Jessica and Cole. The family milks 275 Registered Jersey cows and farms 600 acres in Meadville, Pa.

When calf losses climbed upwards of 10% a decade ago, the Peters family decided it was time to scrutinize their calf-rearing methods. Thus began the long journey to deal with *E. coli* (*Escherichia coli*), the culprit for scours, the primary reason for death in calves less than four weeks-of-age.

“We essentially gravitated toward a more natural method of raising calves,” commented Jessica. “Instead of giving them different drugs and vaccines to bolster immunity, we’ve changed the environment to raise a stronger calf that can develop her own immune system.”

It was a combination of management changes—leaving calves on bottles longer, feeding apple cider vinegar and changing the birthing and newborn environment—that proved to be the trick for better calf survival rates.

The Peters family was finally able to put a halt to calf losses about six months ago. Today, a calf is rarely lost at Spruce Row Farm, with a calf mortality rate of 2% or less.

What Worked, What Didn't

When it came to diagnosing sick and lost calves, the family noticed a common denominator—*E. coli*—was consistently showing up in lab results. Ubiquitous, the bacterium is the single most important cause of bacterial scours in calves across the country. And, the younger the calf, the greater the chance of succumbing to the severe dehydration, electrolyte loss and

acid build-up caused by diarrhea.

“This is a special concern for our Jerseys,” noted Jessica. “Things can snowball out of control quickly, especially for babies, with just 3% body fat at birth. Miss a feeding of a stressed calf and it can be near death the next.”



The Peters family—Jeff, Janet, Jessica and Cole—operates Spruce Row Farm in Meadville, Pa. The family has overcome challenges with calf scours thanks to a combination of management solutions that came by way of trial and error.

One of the early battles the Peters family won came about eight years ago, when they changed the way they were feeding milk to young calves.

“Leaving calves on bottles longer was huge for us in SAVING calves. We used to force them to bucket feed at five days-of-age, sometimes less. When we started to leave them on the bottle for a month, we noticed an immediate fix, with fewer deaths. This was ridiculously satisfying considering most ‘farm fixes’ take months to truly make a difference.

“We also tried a variety of different pharmaceutical products that promised to help—probiotics, vaccines and all kinds of ‘boosters’ for milk replacers,” said Jessica. “None of them seemed to make much of a difference.

“We had pretty much resigned ourselves to learning how to treat scours rather than preventing them. And then, we came upon a few things that started to work in the summer of 2016.”

The use of apple cider vinegar in the calf ration came by way of the nutritionist for the milking cows at Spruce Row Farm.

“One of his clients was feeding it to bull calves with awesome success. After some research, I thought it was worth a try. I figured I’d know pretty quickly if I was going to hurt anything.

“So we bought a squeeze bottle, stole a tablespoon from the house and started adding apple cider vinegar to the milk of our bottle babies four days of age and older. We fed half-ounce (about a tablespoon) per bottle per feeding from day four through day 30.”

The inexpensive home remedy seemed to help with scours prevention.

“We also started bedding our maternity pen with straw instead of sawdust. The new material seems to have reduced the frequency of the scours. And, our baby’s faces and noses are no longer covered with sawdust after a head-first birth, which has to be a plus.”

The family also added three box fans to the calf barn to improve ventilation in warm weather.

Tunnel ventilation from the fans and open doors creates a good 5-7 miles per hour breeze through the barn during the summer months.

Calf raisers at Spruce Row Farm also became sticklers about getting navels dipped in iodine shortly after birth and changed medications used to prevent *E. coli* in newborns.

“We used to use a calf bolus and dosing gun—a miserable experience for both parties. We hated shoving the gun down the throats of these little guys, scraping the inside of their mouths, to get the bolus to the esophageal opening. So, we started grinding up the tablet and mixing it with their colostrum.

“I realized grinding it up wasn’t the most effective way to administer it, nor the manner recommended. So, we switched to Bovine Ecolizer +C20, easily given with a dose syringe in the mouth.”

The scales began to tip in favor of Spruce Row Farm about six months ago. “Knock on wood and cross your fingers, we haven’t lost a calf to scours since August.”

Spruce Row Calf Success

commented Jessica. “Most calf losses now are due to unexplainable, oddball situations, like 2-3 month-old calves that are fine one feeding and gone the next.”

Experimenting need not always cost money, Jessica noted. It can save money as well.

“We try to experiment with just one thing at a time, so we can judge its effectiveness. This was the case with Scourguard 4(K)/C, which we had been using forever it seems. We stopped using it and have seen no ill effects. For us, this is a cost that can be better used elsewhere in herd management.”

Today's Protocol

“We try very hard to take no shortcuts in all aspects of our calf program, especially during the first month.”

Three ladies are primarily responsible for raising calves at Spruce Row Farm. Cole's wife, Michelle, and aunt, Susan, handle morning feedings and Susan and Jessica take care of afternoon feedings. Making sure calf raisers communicate with each other and perform tasks in a consistent manner is paramount.

Cows two weeks out are moved to a group maternity pen with a straw-bedded pack, where calves are born. When they are discovered, newborns have their navels dipped in iodine and are given a dose of Bovine Ecolizer +C20.

“We offer each calf at least four liters of colostrum in the first 24 hours after birth; two liters as soon as possible, then another two liters 12 hours later.”

Spruce Row Farm tests fresh colostrum for immunoglobulin concentration and freezes it in Perfect Udder bags if levels are adequate. Colostrum is thawed in hot

water and fed through a bottle.

“We love these bags because they are durable and can be thawed in hot water without curdling the milk or damaging the immunoglobulins. We dump the colostrum into a bottle and feed that way because it is easier to handle than the bag itself.”

They are moved to the calf barn after they are licked clean by their dam, usually within 12 hours of birth. The floor and walls of the stalls in the calf barn are scrubbed clean, sanitized with bleach and left to dry prior to use. The wooden walls of the stalls were replaced with steel and plastic about three years ago to improve disease prevention. Stalls are bedded with a base of sawdust, topped with shredded paper. Calf jackets are used when needed.

Calves 2-5 days old are fed two quarts of milk replacer (Renaissance Nutrition 22% protein/20% fat with Bio-mos) twice a day. On the sixth day, milk is increased to three quarts, twice a day. When calves are a month old, they are transitioned to a milk bucket and fed milk with a lower concentration of milk replacer.

Calves are also offered a half bottle of water when they are 2-3 weeks old. The practice helps hydrate Jersey calves, which are easily dehydrated.

A 22% protein calf starter in a nipple grain feeder is offered when calves are three days old. The calf starter is made available in a feed pan at about two weeks-of-age. By the time they are weaned at 6-8 weeks, they are eating 3-4 lbs. a day. Calves are weaned based on feed intake.

“To wean calves, we feed them milk in the morning and water in the afternoon for three days. On the fourth day, they are fed all water.”

Post weaning, they get a 4 lbs. grain mixture that is half the 22% protein calf



Providing an ideal environment for calves, especially in the first days of birth, is key to raising well-grown, healthy replacements at Spruce Row Farm.

starter they are used to eating along with an 18% protein pellet. A week later, they are fed 4 lbs. of the 18% protein pellets and high protein baleage.

Calves are housed in the calf barn until they are 4-5 months old and then moved to groups of six in a group facility that has freestalls, waterers and headlocks. To ensure a successful transition and to reduce stress, they're fed the same pellets and hay so there is something familiar in their routine.


It is important to know your animals so you can recognize signs of stress early on.

“Thanks to the roller coaster weather this winter, we've been dealing with more incidents of pneumonia. We've been diligent about taking temperatures and listening to lungs at the first signs of coughing or shortness of breath, so we can head it off at the curve.”

Overcoming Challenges

The Peters family readily admits that aging, overcrowded facilities are the weak link in herd management, factors that ultimately impact everything.

“We're housing 250 cows in a 20-year-old barn built for 200 cows. We milk in a double-eight parallel parlor that is as old as the barn, with original equipment. Though we've been able to make band aid fixes by adding a few stalls here and there and renovating others, updates are long overdue.



RECIPE Calf Raising Success

From the kitchen of Spruce Row Farm

INGREDIENTS

- 1 tablespoon apple cider vinegar
- 2 quarts milk
- 1 nipple calf bottle

Serves: 1 calf

DIRECTIONS

Add apple cider vinegar to milk and mix well. Feed to calves four days-of-age through one-month-old each feeding. Add a generous dose of other healthy management practices, including stalls scrubbed clean with bleach between calves, a fresh bedding of sawdust and shredded paper and a calf jacket in cool weather. Feed additional 1/2 quart water at day 14 to ensure hydration.



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We are hoping to be in a position to build a new milking facility soon and convert the current barn to a dry cow and heifer facility.

“In the meantime, we have put a lot of emphasis on management of cows and calves alike.”

Their management skills are reflected in benchmarks for the herd. Spruce Row Farm achieves an average age-at-first calving of 22 months on a consistent basis, a bulk tank somatic cell count of 200,000 and daily production of 65 lbs. milk per cow, with a goal of 70 lbs. The 2016 lactation average of 21,411 lbs. milk, 914 lbs. fat and 754 lbs. protein ranks eighth in the nation for milk among herds with 159-299 cows. Spruce Row Farm also ranks among the top 50 herds in the nation for genetic merit, with a herd average JPI of +68.

Sharing Knowledge

“Like most dairy farmers, we are always striving to find ways to treat our cows better and make our lives easier,” said Jessica. “We are members of a close-knit community where learning comes from sharing.”

“Our best ‘fixes’ have come from other farmers and industry professionals.

“I love the process that comes from talking to other farmers about what’s worked for them and enjoy sharing what’s worked for us. Often, I spend a few days—sometimes weeks—discussing what we think might work for us and vice versa.”

For Jessica, sharing with fellow dairy producers—and consumers—often comes by way of social media, primarily Facebook. At any given time, she has 3-4 posts started in the notepad application on her phone, reworking them several times before

posting to ensure they convey her message.

“I’ve never been afraid to talk about what’s going wrong—and right—on our farm. If we don’t talk about our problems, we may never solve them. I also know that farmers are smart enough to know that what works for us may not work for them.”

One of the most rewarding aspects of this business is being able to do your own thing with your dairy herd and find solutions to challenges.

More Information

For more information on raising Jersey heifers, work with your veterinarian, nutritionist and extension personnel. The AJCA also has a reference guide available. Request it by calling the AJCA at 614-861-3636. Or you can find the guide online at https://www.usjersey.com/Portals/0/AJCA/2_Docs/QualityHeiferBrochure.pdf.