# Milk quality is part of their daily culture

As winners of the nation's top milk quality awards, these Idaho, Michigan, Minnesota, and Wisconsin farm teams share their best practices.

THE 2019 National Dairy Quality Award Platinum winners represent an exemplary group of dairy producers. Not only do these herds produce some of the nation's highest quality milk, these farms incorporate the many recommended, science-based practices that lead to positive outcomes.

Nominators submitted applications from 82 farms this year. From that group, the judges made the first screening based on milk quality benchmarks. Of those, 45 herds merited further analysis by a team of judges through a comprehensive review of measures to ensure milk quality. After judging, final applications were designated as Silver, Gold, or Platinum winners. The previous page lists all of this year's winners along with their nominators. *Hoard's Dairyman* is honored to co-sponsor the National Dairy Quality Awards with the National Mastitis Council. The program is possible thanks to sponsorship from Boehringer Ingelheim, Conewango, Ecolab, GEA, IBA, and the MILC Group.

Here's how this year's winners get the job done.

## What is your milking procedure?

**Evergreen:** We have a written protocol. Milkers must wear gloves at all times when milking cows. We predip, strip out foremilk, dry teats with a microfiber towel, attach the milking units, and postdip.

**Fischer-Clark:** We have a written protocol. We predip, dry teats using microfiber towels, attach the milking units, and postdip. All milkers are required to wear gloves at all times.

**Maple Ridge:** Our first step is to predip and then forestrip. We wash and dry the teats with a teat scrubber. Then the milking units are attached and teats are postdipped after milking. We require the milkers to wear gloves at all times during milking, and we have a written milking procedure.

**RKB:** We clean sand off the udder. Then, we strip out the foremilk, predip, dry the teats with washable microfiber towels, attach the milking unit, and postdip.

**Wilson Centennial:** Our written protocol includes: predip, forestrip, dry teats with microfiber towels, attach the milking units, and postdip. Milkers are required to wear gloves during milking. They change gloves after each group or if they leave to do another task and then come back to the parlor.

**Windmill:** The milkers follow a written protocol. We spray a 0.5% iodine predip, foremilk (prime), clean with one cotton towel per cow, attach, then post dip. Milkers must wear gloves.

## How do you maintain healthy teats?

**Evergreen:** We use quality pre- and postdip that contains 1% iodine to help maintain moisture of the skin. We do regular checks for takeoffs, vacuum levels, and other milking equipment settings to maintain consistent levels of milking throughout the year. These are scheduled every six months but are done more often if needed or if a problem arises.

**Fischer-Clark:** We properly maintain the milking equipment. This includes regularly scheduled maintenance with a check off for service performed at the proper intervals. We also make sure we have proper vacuum levels. Our dairy has consistent, written standard operating procedures for milking from employee to employee as well as shift to shift.

**Maple Ridge:** We pre- and postdip with skin conditioning teat dips. Our milkers follow a strict prep routine, and the routine is closely monitored for consistency. We use a mechanical teat scrubber to optimize a strong, consistent oxytocin release.

**RKB:** We don't overmilk, and inflations are changed on schedule. We quickly correct any liner slips. We use teat dip that is suitable for the weather conditions — iodine-based barrier dip for nonfreezing weather, cold weather dip for freezing temperatures, and dry dip when it is extremely cold.

**Wilson Centennial:** The automatic takeoffs and vacuum levels are charted quarterly by Robert's Dairy Service, our equipment dealer. Inflations are changed every three weeks. We installed new pulsators this past spring. We emphasize having clean, dry teat ends prior to attaching the milking unit and good postdip coverage.

**Windmill:** We have a goal to have the milking attachment on less than 90 seconds after cows are prepped for milking. The takeoff setting is consistent. We use dependable teat dips and milking inflations. We maintain our milking system and follow the milking protocols.

## How do you keep cows comfortable?

**Evergreen:** Milk cows are housed in naturally ventilated freestall barns. They are equipped with fans and misters that turn on to help with heat abatement.

About three years ago, we adjusted the stalls since our farm switched to sand bedding for the purpose of cow comfort and cleanliness. Stalls are walked daily, and if a stall is broken or not usable, it is fixed as soon as possible.

When on pasture, dry cows are rotationally grazed and moved every three weeks to new pasture. This is done to ensure clean, quality grass. We also apply Ultra Boss fly spray every three weeks. During winter or close-up time, dry cows are housed in naturally ventilated barns with fans to help the airflow and heat abatement. Freestalls are bedded twice a week with clean, fresh sand and groomed three times a day. We do not overcrowd dry cows by going over 100 percent stocking density.

**Fischer-Clark:** Cow comfort is monitored to encourage cow cleanliness, such as good airflow (fan ventilation for tunnel barn and curtain sidewalls), temperature regulation, fly control, and cow brushes. Clear polycarbon siding on the barns uses natural light to help dry the barn and helps employees visually monitor the barn better. The deep-bedded sand stalls are groomed three times a day and sand is added weekly. Alley scrapers run 24 hours a day. Cow tails are trimmed properly.

**Maple Ridge:** We use virgin sand, which is added twice a week, and stalls are groomed six times a week. Manure is scraped three times a day during milking.

Our barns are 20 years old. One barn is naturally ventilated and the other is tunnel ventilated. Stall dimensions and alley widths could be larger. Cows are handled slowly and carefully to minimize adrenaline. Our motto is "Slow is fast!"

Dry cows have the same housing and bedding protocols as the lactating animals except manure


**Milk cultures are routine practice** at Evergreen Dairy Farm. "At calving, we culture all heifers and also any cow with a previous history of high SCC or *Staphylococcus aureus*," said Kris Wardin. "When we detect mastitis during mid-lactation, we take a milk sample and simultaneously start treatment due to timeliness of getting results back," he continued. "When lab results come back, we discuss best treatment options with our veterinarian. If a pathogen is identified as nontreatable, we would discontinue treatment and make culling decisions from there." The farm team includes (L to R): Marcos Tapia Lorenzo, Francisco Carrillo Lopez, Ryan Warnke, Carla and Kris Wardin, Dave and Mike Warnke, and Fidel Gonzalez Lorenzo. Carla and Kris are the sixth generation to operate the St. Johns, Mich., farm, having taken the dairy over from Carla's parents, Jack and Cherie Anderson.


**Frac sand is the bedding of choice** at Fischer-Clark Dairy Farm. The high-quality quartz sand and its round granules provide an excellent cushion for the cows housed in freestalls. "More importantly, it's a natural cleaner," said David Fischer, co-owner of the Hatley, Wis., farm when answering the question regarding the extremely clean cows located throughout the barn. "Stalls are groomed three times a day, and new sand is added weekly," he went on to say, admitting that frac sand is more expensive than other options, but the benefits outweigh the added costs. No longer able to tail dock due to new standards in the FARM (Farmers Assuring Responsible Management) program, David added, "We routinely trim switches . . . tails were never a cause for high somatic cell counts for us." Shown above are (L to R): Jon and Heidi Fischer, and David and Susan Fischer.


Corey Geiger

**The team at Maple Ridge Dairy** makes a great effort to incorporate technology and innovative ideas all while handling cows slowly and carefully to minimize adrenaline. "Our motto: 'Slow is fast!'" said Brian Forrest. "Selective dry cow therapy is one strategy we did during the award year," he added. "If any cow had a test-day somatic cell score over 200,000, we treated the cow with Dry-Clox intramammary and administered Orbeseal." The Stratford, Wis., dairy also uses J-5 vaccine to build immunity against mastitis pathogens. "We administer J-5 three weeks prior to dry-off, three weeks before calving, three weeks after calving, and during mid-lactation," added Forrest. Shown above are members of the Maple Ridge team (L to R): Juan Avin, Bill Link, Brian Forrest, Mike Martin, and Jami Schultze.


Maggie Gilles

**RKB Dairy of Faribault, Minn., is a back-to-back NDQA winner**. When visiting the dairy, it's clear that the farm does all the little things well to maintain an impeccable somatic cell count that averaged 68,000 and peaked at 81,000 on shipped milk. Likewise, the herd had a Standard Plate Count with a 1,000 midpoint and a 3,000 high. Consistency and cleanliness are guiding principles for Glen, Kathy, and Randy Bauer, shown above. "Consistency with regard to following established protocols," said co-nominator Brandon Balzer with IBA. "Cleanliness of the animals and milking area," continued Balzer. "Care — enough care to keep pushing forward, doing the right thing despite the numerous challenges facing the modern dairy farm," he added.

alleys are scraped once a day.

**RKB:** The sand-bedded stalls are groomed twice a day. Manure and soiled sand are cleaned out frequently, with sand added as needed. Alleys are scraped twice a day. The sand stalls are dug up when needed to prevent compaction. Curtains are adjusted as needed, fans are on thermostats, sprinklers are on a thermostat and timer during warm weather, and cows are sprayed for flies when leaving the parlor during summer.

Dry cows are in loose housing with an open-front shed and an outside lot. The principle bedding is cornstalks, and this barn is frequently cleaned. Panels are removed from the back of the shed during the summer months and fans run to keep cows comfortable. Flies are controlled by feeding ClariFly Larvicide in the feed.

**Wilson Centennial:** Milk cows are kept in two-row freestall barns with sand bedding. Fresh-washed sand bedding is changed once a week, and we bed the front end of the freestall deeper for better cow comfort. We scrape the alleys three times a day and put down hydrated lime on stall surfaces once a day on areas of high moisture.

Barns are naturally ventilated, with fans every 40 feet and misters over headlocks that are temperature controlled and turn on when temperatures go over 64°F. We have made our freestalls wider to accommodate larger-bodied cows. The stalls are 55 inches wide and 8 feet long. All stalls are maintained and fixed as needed.

Dry cows are kept in freestall barns and put into separate groups, far-off and close-up. Both groups are bedded with clean, fresh sand once a week and scraped once a day with a skid steer. The barns have temperature-controlled fans and the far-off barn has misters over the headlocks. Far-off stalls are 48 inches wide and close-up are 50 inches wide.

**Windmill:** The sand freestalls are spot cleaned with a rake three times a day as cows head to the milking parlor. Additionally, the entire stall is groomed and leveled once a day.

Every night, a small amount of sand is added to the stalls of each group. The open lots all have roofs for shade and are cleaned out and bedded twice a week in the winter. In summer, when no straw is used, the compost bedding is harrowed daily to help dry the area. Manure from all barn alleys is vacuumed twice a day.

For the summer heat, all groups have misters, which are located over the cows at the feed manger headlocks. The holding pen is equipped with fans and misters as well as fans in the milking parlor.

## How do you detect mastitis?

**Subclinical:**

**Evergreen:** We use Dairy Herd Information Association (DHIA) tests and a California Mastitis Test (CMT) paddle.

**Fischer-Clark:** We review somatic cell count (SCC) scores.

**Maple Ridge:** We use DHIA and SCC scores.

**RKB:** We closely monitor DHIA SCC reports and run a CMT on suspicious quarters and cows.

**Wilson Centennial:** We use a CMT paddle in the parlor and/or DHIA SCC results.

**Windmill:** We use CMT to identify the quarter after test day results.

**Clinical:**

**Evergreen:** We have a milking routine with prestripping to help detect clinical mastitis.

**Fischer-Clark:** We inspect the appearance of milk that may be abnormal. We use SCR collars to monitor activity and rumination for cows. We watch for cows that are out of their normal routine. With a list alert system, we visually inspect the udder for redness, swelling, or tenderness.

**Maple Ridge:** We strip each quarter every milking to detect clinical mastitis.

**RKB:** We carefully watch the strip cup and forestripped milk, follow up with the CMT, and watch/feel the udder during milking.

**Wilson Centennial:** We look for chunks, blood, a "hot-to-the-touch" quarter, and watery milk. We also watch to see if the cows are off feed, not chewing their cud, or have high body temperatures.

**Windmill:** We do both prestripping and post-milking evaluation.

## What steps do you take at dry-off?

**Evergreen:** We use a blanket treatment method on our farm. First, we wipe all the teats with iodine wipes (one wipe per cow). We use Albadry Plus (novobiocin and penicillin) intramammary and work it up into the quarter and then pinch off the top of the teat to give Orbeseal.

For cows that have a somatic cell count higher than 250,000 SCC per mL, we treat four days prior to dry-off with Spectramast LC (ceftiofur hydrochloride) intramammary. We give 2 cc of J-Vac intramuscular and 2 cc of Scourguard 4K intramuscular at the time of dry-off as well.

Far-off cows are moved to pasture (in-season; barn if not) for 30 days. They are moved to the freestall barn 30 days before calving and given 2 cc J-Vac intramuscularly. At 60 days postfresh, 2 cc of J-Vac intramuscularly is used for the final treatment.

**Fischer-Clark:** At 220 days carried calf (DCC), cows are vaccinated with 2 cc Endovac-Dairy intramuscularly. Tomorrow (cephapirin) tubes are inserted intramammary at dry-off following milking. Lockout tubes are inserted intramammary at dry-off, following Tomorrow, to seal the teat end.

**Maple Ridge:** At dry-off, we use Dry-Clox (cloxacillin benzathine) intramammary and follow that up with Orbeseal.

**RKB:** The teat is wiped with an alcohol pad, intramammary infusion with a Tomorrow tube (cephapirin), slowly infuse an Orbeseal teat sealant tube, dip with T-Hexx dry teat sealant, and repeat on the other quarters. The cow is immediately moved to the dry cow pen, the treatment is written down, and the cow's rear legs are marked with red livestock chalk.

**Wilson Centennial:** Blanket dry treatment is done every Saturday. We use one large alcohol wipe per teat and administer Spectramast DC (ceftiofur hydrochloride) intramammary, then wipe all four teats again. We pinch the top of the teat, administer Orbeseal, and then wipe all four teats again. That is followed up with postdip of Uddergold teat sealant.

Three days later, we give 2 cc Endovac-Dairy intramuscularly, plus 2 cc Scourguard 4K intramuscularly. Thirty days prior to calving, cows receive 5 cc Ultrabac Clostridium subcutaneously (under the skin), 8 cc Multimin subcutaneously, and 2 cc Endovac-Dairy intramuscularly. All needles are single-use to prevent the spread of bovine leukosis.

**Windmill:** Orbenin (cloxacillin benzathine) dry cow therapy intramammary, BoviBlock teat sealant intramammary, T-Hexx (external sealant), and J-Vac intramuscularly.

## Describe your mastitis treatments.

**For mild cases:**

**Evergreen:** We use Spectramast LC (ceftiofur hydrochloride) once a day for four days, intramammary. Milk is withheld for 72 hours.

**Fischer-Clark:** We use Today (cephapirin) two times a day for one day, and milk is withheld for 96 hours.

**Maple Ridge:** We use Spectramast LC (ceftiofur hydrochloride) once a day for five to eight days, intramammary. Milk is withheld for 72 hours.

**RKB:** We use Spectramast LC (ceftiofur hydrochloride), intramammary, for three to five days, once a day. Milk is withheld for 72 hours. In other cases, we use Pirsue (pirlimycin hydrochloride), intramammary, once a day for three to five days. Milk is withheld for 36 hours.

**Wilson Centennial:** We use Spectramast LC

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**A cowman to the core, Brent Wilson** zigged when everyone else zagged by focusing on milk components instead of pounds of milk decades ago. "We ship over 7 pounds of milkfat and protein from each cow," said Wilson of his Holstein herd that averages 31,146 M, 4.3%, 1,334 F, 3.4%, and 1,051 P, all while averaging a contest low 67,000 somatic cell count. The Wilson Centennial Farm team of Carson City, Mich., includes (L to R): front row, Kaitlynn Card, Chris Benjamin, Alberto Torres Ramirez, Avimael Morales Jose, Lucerito Alonso Gomez, and Reynel Guzman Ramirez; back row, Charles Blackmer, Billamar Alonso Alonso, Tomas Pacheco Alonso, Ben Wilson, Nancy and Brent Wilson, Tyler Wilson, Guadalupe Ramirez, and Angel Escobar Ortiz. These days the multigenerational farm is owned by Brent and Nancy Wilson and their sons, Tyler and Ben.


**Producing a quality product is no easy task.** "It is John Doornenbal's personal belief that it is a dairyman's job to produce only high-quality milk," said nominator Allan Britten of Udder Health Systems. "He understands that there are bacterial challenges that his cows encounter every day. He knows that it's his obligation to mitigate the negative effects of these challenges and protect the health of his cows," continued Britten in discussing the Middleton, Idaho, dairy. "This means that he will make the extra time and focus on the necessary details required to ensure that only the highest quality milk from his dairy is shipped to market." Shown above are (L to R): Juan Nuñez, Miguel Mendoza, Armando Valdez, Ramon Mendoza, herdsman Vincente Montez, Jorge Faustino, Jesus Mendoza, Martin Guijosa, and John Doornenbal, owner of Windmill Dairy.

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(ceftiofur hydrochloride) intramammary for five days, once a day. Milk is withheld for 240 hours. We also use Today (cephapirin), intramammary, once a day for two days. Milk is withheld 120 hours.

**Windmill:** Spectramast LC (ceftiofur hydrochloride), intramammary, once a day for five days. Milk is withheld 72 hours.

**For moderate cases:**

**Evergreen:** Same treatment as mild cases, except treatment is done for seven days.

**Fischer-Clark:** Same treatment as mild cases.

**Maple Ridge:** Same treatment as mild cases.

**RKB:** Same protocol as mild cases, except treatment is done for five days.

**Wilson Centennial:** For moderate cases, we use either Spectramast LC (ceftiofur hydrochloride), intramammary, once a day for five days with a 72-hour milk withhold or Amoxi-Mast (amoxicillin) three times, 12 hours apart with a 60-hour milk withhold. Milk is withheld for 240 hours. We also use Polyflex (ampicillin) once a day for three days, intramuscular. Milk is withheld for 48 hours.

**Windmill:** Same Spectramast LC protocol as for mild cases.

**For severe cases:**

**Evergreen:** We use Spectramast LC (ceftiofur hydrochloride), intramammary, once a day for seven days. Milk is withheld for 72 hours. We also use Banamine (flunixin meglumine) through an IV (intravenous) two times a day for three days. Milk is withheld for 36 hours. We also will try an oral pump with an alfalfa/yeast/salt mixture for three days, twice a day.

**Fischer-Clark:** We administer Oxytetracycline (IV), Spectramast LC intramammary (ceftiofur hydrochloride), or flunizin meglumine (IV) three times for one day. Milk is withheld 96 hours, 72 hours, or 36 hours, respectively.

**Maple Ridge:** In addition to the aforementioned treatment options, we administer hypertonic saline and calcium IV, deliver aspirin orally, culture the infected quarter, and apply Uddermint to the quarter.

**RKB:** We use Pirsue (pirlimcycin hydrochloride), intramammary, once a day for three days. Milk is withheld for 36 hours. We also use Naxcel (ceftiofur sodium), intramuscular, for five days, once a day, and milk does not need to be withheld. Another option is Banamine (flunixin meglumine) through an IV once a day for two days. Milk is withheld for 36 hours.

**Wilson Centennial:** With severe cases, we will administer one shot of vitamin B. Spectramast LC (ceftiofur hydrochloride), same protocol as mild and moderate cases. We also may use Banamine (flunixin meglumine), IV, once a day for two days. Milk is withheld for 36 hours.

**Windmill:** Spectramast LC (ceftiofur hydrochloride) protocol is same except milk is withheld 96 hours. Also use hypertonic saline, Flunixin (flunixin meglumine), and Drench-Mate as needed.

## How do you track treated cows?

**Evergreen:** Treated cows have red velcro bands on both hind legs and are separated from the milking herd. We also have the cow(s) identified on a whiteboard in the parlor and uploaded on PC Dart.

With information from past cultures and DHIA records, we have cow history stored on PC Dart. We also document health of that animal from daily observations and treatments.

**Fischer-Clark:** Treated cows are identified with red leg bands on both legs — they are also noted in Dairy Comp 305. At cowside, we use a clipboard and Excel sheet to track all relative information. That information is then entered into Dairy Comp 305 for a permanent record. We also use Dairy Comp 305 to update individual cow cards. Data is updated daily by the herdsperson, and DHIA testing data is uploaded monthly.

**Maple Ridge:** Leg bands and the hospital sheet are used to identify treated cows, which are kept in a separate pen. We keep track of these cows on paper and with Dairy Comp 305. We maintain these records for three years.

**RKB:** We use red duct tape on both back legs. The cows are put in the special needs pen and milked last, which is written down in the parlor.

The cow identification (ID), treatment date, what it is being treated for, and drugs administered are written in a notebook that is kept in the barn. The day they tested negative is also recorded. The information is recorded on the cow's card in a card file that contains herd health information. The milking unit is not used on other cows.

**Wilson Centennial:** To identify treated cows, we use bright-red bands, two bands per back leg, along with a red band on the tail if the cow has a fever.

All treatments are uploaded to PC Dart. Employees use a pad of paper to write down the cow ID, what they treated with, how much medicine was given, and the date. At the end of the day, those are taken to the house to be put into PC Dart. We can access PC Dart from the computer in the office or on tablets by all employees.

All vaccinations, diseases, and surgeries are recorded on PC Dart. The employee will write down the treatment on paper, bring it to the home computer for input to PC Dart, record the specific quarter treated, what drug was used, and route of administration.

**Windmill:** Treated cows are put into a hospital pen with an orange leg band. Treatment is entered on the hospital clipboard and into our Dairy Comp 305 computer records.

| | Evergreen Dairy | Fischer-Clark Dairy | Maple Ridge Dairy | RKB Dairy | Wilson Centennial Farm | Windmill Dairy |
|---|---|---|---|---|---|---|
| Cows (milking/dry) | 415/75 | 895/107 | 1,700/200 | 111/17 | 830/99 | 800/100 |
| Breed | Holstein | Holstein | Holstein | Holstein/Jersey | Holstein | Holstein |
| Milk (lbs.) | 27,590 | 32,224 | 28,332 | 26,054/18,018 | 31,146 | 30,677 |
| Fat (%) | 3.7 | 4.0 | 4.1 | 4.2/5.3 | 4.3 | 3.8 |
| Protein (%) | 3.0 | 3.2 | 3.2 | 3.2/3.8 | 3.4 | 3.2 |
| SCC avg. | 70,000 | 77,000 | 76,000 | 68,000 | 67,000 | 78,000 |
| SPC avg. | 3,000 | 1,000 | 2,000 | 1,000 | 2,000 | 4,000 |
| Cows leaving the herd (slaughter) (%) | 37.3 | 24.9 | 41.2 | 19.8 | 30.7 | 31.0 |
| Udder health-related culls (% of culls) | 12.3 | 9.4 | 6.8 | 13.6 | 3.1 | 12.1 |