



THE BEST OF THE BEST

From 86 applicants, these operations stood out for having produced high-quality milk consistently. Applications were evaluated for measures of quality, systems of monitoring udder health, milking routine, protocols for detection and treatment of clinical and subclinical cases of mastitis, and strategies for overall herd health and welfare.

PLATINUM WINNERS

Recipient	Nominator	Recipient	Nominator
Kathy and Randy Bauer, Faribault, Minn.	Brandon Balzer, IBA	Gordon, Jonathon, and Matthew Lamb, and James Veazey, Oakfield Corners Dairy, Oakfield, N.Y.	Sara Gillette, Upstate Niagara Cooperative, Inc.
Brad Crandall, Battle Creek, Mich.	Brandon Ewer, **MMPA	Lyman Rudgers, Attica, N.Y.	Jon Kemp, Attica Veterinary Associates PC
Don and Pat, Chet and Patty Dolph, Lake Mills, Wis. ...	Bill Mueller, Grande Cheese Co.		
Jeff, Steve, and Randy Endres, Waunakee, Wis.	Bill Mueller, Grande Cheese Co.		

GOLD WINNERS

Recipient	Nominator	Recipient	Nominator
Roger Almeter, Strykersville, N.Y.	Madison Hopcia, Upstate Niagara Cooperative Inc.	Butch and Ron Maly; Alicia Sippi, Bryant, Wis.	Jolynne Schroepfer, Sartori Co.
Jim and Karen Davenport, Ancramdale, N.Y.	Ruth McCuin, Agri-Mark, Inc.	Michigan State University, Lansing, Mich.	Lindsay Green, **MMPA
Gordon, Dale, and Mark Dick, McBain, Mich.	Deb Gingrich, **MMPA	Mark and Sara Miller, Millersburg, Ohio	Mary Barnum, SmithFoods Orrville, Inc.
Cory and Maria Dorner, Luxemburg, Wis.	Ryan VandenPlas, Total Dairy Service LLC	John Mueller, Bloomfield, N.Y.	Madison Hopcia, Upstate Niagara Cooperative Inc.
Tim Fessenden, King Ferry, N.Y.	Lisa Ford, Cayuga Marketing	Willie and Karen Naatz, Mantorville, Minn.	Dale Heintz, Ag Partners Cooperative
Steve, Phil, and Kevin Gross, Weidman, Mich.	Deb Gingrich, **MMPA	Hans Nederend, Homedale, Idaho	Justine Britten, Udder Health Systems
Dave and Stacy Jauquet, Luxemburg, Wis.	Ryan VandenPlas, Total Dairy Service LLC	Tjerk and Ramona Okkema, Blanchard, Mich.	Lyndsay Earl, **MMPA
James, Louanne, Evan, and Harrison Kiko, Paris, Ohio.	Mary Barnum, SmithFoods Orrville, Inc.	Jim Stuart, Lowell, Mich.	Ashley DeWitt, *DFA
Gordon, Jonathon, and Matthew Lamb, and James Veazey, Lamb Farms Dairy, Oakfield, N.Y.	Sara Gillette, Upstate Niagara Cooperative, Inc.	Carey and Emily Tweten; Gene and Phyllis Speltz, Lewiston, Minn.	Dale Heintz, Ag Partners Cooperative
Paul & Barb Liebenstein, Dundas, Minn.	Dale Heintz, Ag Partners Cooperative		

SILVER WINNERS

Recipient	Nominator	Recipient	Nominator
Johannes Arts, Scott, Ohio	Jeff Rohlf, *DFA	James Kronemeyer, Pickford, Mich.	Frank Brazeau, **MMPA
Doug, Bruce, Jason, Ryan, and Kyle Benthem, McBain, Mich.	Deb Gingrich, **MMPA	Molly and Kyle McGuire, West Liberty, Ohio	Tyler Dunivan, *DFA
Charles Bode, Marion, Mich.	Lyndsay Earl, **MMPA	Leroy and Rose Meyer, Fort Loramie, Ohio	Steve Gilland, Organic Valley CROPP/COOP
Michael Bosscher, McBain, Mich.	Deb Gingrich, **MMPA	Travis Rahn, Eden, Wis.	Mark Sosalla, Waupun Veterinary Service
Louis and Ronald Brecht, Shepherd, Mich.	Deb Gingrich, **MMPA	Tony and Rebecca Rosebrugh, West Branch, Mich.	Steve Steely, *DFA
Mike and Sue Clark, Jon and Heidi Fischer, Hatley, Wis.	Jolynne Schroepfer, Sartori Co.	Mark and Susan Rushton, Grafton, Vt.	Linda Hansen, *DFA
Barry Gillhespy, Wayland, Mich.	Rachel Brown, **MMPA	Dave and Rick Tacoma, Falmouth, Mich.	Deb Gingrich, **MMPA
Norm, Kim, and Derrick Hammond, Dowling, Mich.	Rachel Brown, **MMPA	John, Brent, and Shane Williams, Spring Arbor, Mich.	Rachel Brown, **MMPA
Loren Hanson, Elk Mound, Wis.	Shane Bamman, Ellsworth Co-op Creamery	Gary Zuiderveen and Chris Martz, Falmouth, Mich.	Deb Gingrich, **MMPA
Alan and Deborah Koppenol and Ken Raterink, Coopersville, Mich.	Rachel Brown, **MMPA		

*Dairy Farmers of America
**Michigan Milk Producers Association

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Herds both large and small master milk quality

With herd sizes ranging from 100 to 2,800 cows, these National Dairy Quality Milk Awards winners prove that every herd, regardless of size, can achieve impeccable milk quality.

THE NATION'S milk quality continues to improve as the milk shipped from dairy farms achieved new quality standards throughout the past year when evaluating somatic cell count data and other quality measures. One has to look no further than this year's National Dairy Quality Awards contest to see that trend as a mere five points separated the very top Platinum herd from the final herd to make the Gold category.

As a whole, the National Dairy Quality Awards winners represent an exemplary group. Not only do these herds produce some of the nation's highest quality milk on a daily basis, but they also incorporate many science-based practices that lead to positive outcomes or help to quickly thwart a pathogen or mastitis outbreak should one arise on the farm.

Nominators submitted applications from 66 farms. From that group, the judges made initial screenings on milk quality benchmarks. Then, 46 herds merited further analysis by a team of judges and a comprehensive list of measures to ensure milk quality. After the judging, 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 support from the major sponsor Boehringer Ingelheim. Contributing sponsors include Cargill, Conewango, Ecolab, GEA, and Portacheck.

Here's how the Platinum winners get the job done.

What is your milking procedure?

Crandall Dairy Farms: Milkers always wear gloves. First, we brush off any sand, then we strip out foremilk, predip, dry teats with microfiber towels, attach the milking unit, postdip, and hand strip after milking.

Dolph Dairy: Milkers wear gloves at all times. We begin by dry wiping each cow with an individual microfiber towel, predip, strip out foremilk, dry teats with a microfiber towel, attach the milking unit, and postdip.

Endres Berryridge Farms: Milkers wear gloves during the entirety of every milking shift. We strip out foremilk, predip, dry the teats with a microfiber towel, attach the milking unit, and postdip.

Lamb Farms: With the GEA DairyPro-Q robotic, the milking procedure is all done in the teat cup. That milking procedure begins when peroxide predip is applied to the teat. After the robot's preparation procedure is complete, the peroxide predip is dumped from the line. When the robot senses clean milk, it switches over from the dump line to the milk line. After milking is complete, a "1-10 postdip" is applied in-cup (1% iodine and 10% emollient).

RKB Dairy: Milkers always wear gloves. Sand is cleaned off the teats first, followed by stripping foremilk. Then we predip, dry teats with a washable microfiber towel, attach the milking unit, and postdip.

Rudgers Registered Jerseys: Our milkers wear gloves all the time. Our milking procedure is to strip out the foremilk, predip, dry teats with a microfiber towel, attach the milking unit, and postdip.

How do you maintain healthy teats?

Crandall: We ensure that our milkers are trained on the proper milking procedure, which includes thoroughly cleaning and drying teat ends before attaching the unit. It is also important to use high-quality teat dips that contain emollients to protect and heal the skin. We also maintain clean, dry bedding in the freestalls to prevent irritation or damage to the udder and teats.

Dolph: We rotate two postdips every other

week, which are Derma Sept (1% iodine) and Valiant (chlorine dioxide). When the weather is 10°F or colder, we use Chem-Star Recover for postdip. When prepping cows, we are flipping microfiber towels for better cleaning of teat ends. Regular milking equipment maintenance and teat end scoring also help us maintain healthy teat ends.

Endres: Meticulous stall maintenance, pre- and postdip, one clean towel per cow, and udder singeing all aid in maintaining healthy teats.

Lamb: To ensure teat health, we monitor teat end vacuum levels, monitor takeoff settings, and use emollient postdip.

RKB: We do not overmilk cows, we change inflations on schedule, and we quickly correct liner slips. We also use high-quality teat dip appropriate for the weather conditions: iodine-based barrier dip during nonfreezing temperatures, cold weather dip for freezing temperatures, and powder dip when it's extremely cold.

Rudgers: For us, our pathway to maintaining healthy teats includes utilizing automatic take-offs, placing inflation changes on a set schedule, pre- and postdipping, and wiping teats with a microfiber towel.

How do you keep cows comfortable?

Crandall: Stalls are cleaned at every milking. New sand bedding is added weekly, more often if needed; stalls are raked weekly, more often if needed. Fans are run whenever ventilation is needed. Also, curtain sides are opened and closed based on weather conditions.

Dolph: Both freestalls are bedded with virgin sand. We rake out our freestalls at each milking and cover wet spots with dry sand. We groom stalls at the morning milking. New sand is put in twice a week during the morning milking. When



Crandall Dairy Farms, Battle Creek, Mich.

High-quality milk and high milk production both make the headlines for this Michigan dairy farm that earned back-to-back Platinum honors. The 345 Holstein cows average 32,115 M, 1,340 F, and 1,021 P, all while averaging a 64,000 somatic cell count on milk shipped during the contest year. Cows are milked in a double-12 parallel parlor and housed in a four-row freestall barn featuring deep-bedded sand stalls. The farm treated 44 clinical cases of mastitis last year, and all cows had a negative SNAP test for antibiotic residues before reentering the main milking herd, reported milk quality leader Brad Crandall. The farm team includes (L to R): front row, Kylie Crandall, Monica Crandall, Stacy Koyl, TJ Paul, Kelley Wagner, and Jackson Wood; back row, Zach Crandall, Brad Crandall, Larry Crandall, Mark Crandall, and Thomas Wagner.



Dolph Dairy, Lake Mills, Wis.

Teat-end scoring is one of the many practices that southeastern Wisconsin's Dolph Dairy routinely employs to ensure milk quality. When prepping cows, milkers also flip the microfiber towels over to be certain both the teats and teat ends are as clean as possible prior to attaching the milking unit, shared Patty Dolph, who heads up the farm's milk quality effort. Also a back-to-back contest winner, the 520-cow Holstein herd averages 33,000 M, 1,321 F, and 1,040 P and cows are milked in a double-9 parallel parlor. The milking herd is housed in two freestall barns. With a watchful eye on cow comfort and milk quality, the Dolphs keep the sand pile dry by tarping it when rain or snow is in the forecast. The team includes (L to R): front row, Gretta Boettcher; back row, Chet Dolph, Patty Dolph, Don Dolph, Brian Danneisen, Dale Fenner, Felix Sarmiento, and Marlon Antonio Lopez.



Endres Berryridge Farms LLC, Waunakee, Wis.

It's all hands on deck when milk quality is concerned at Endres Berryridge Farms. Sarah Landes and Zach Endres establish and implement protocols, cow treatments, and help with employee training. Brothers Randy and Steve Endres work through herd and culling decisions, employee training and monitoring, and assist with cow treatments. The farm's employees who handle milking carry out quality performance in the milking routine, identify mastitis, and keep stall beds tidy each and every day. Jeff Endres heads up compost bedding production and quality assurance for that product, which goes into every freestall bed. The team includes (L to R): David Marin, Merlig Laguna, Jeff Endres, Sarah Landes holding Maddi Landes, Steve Endres, Randy Endres, Zach Endres, Hernondo Duarte, Cristian Caceres, Darvin Ramirez, and Rafael Gamez.



Lamb Farm's Oakfield Corners Dairy, Oakfield, N.Y.

Extra attention to detail and a "cow comfort first" mindset helped one of the nation's first herds milked in a robotic rotary to earn Platinum milk quality honors. To ensure more uniform and complete milking, Jonathan Lamb shared that cows are grouped by parity, milking speed, and stage of lactation. Since installing the parlor, the farm team also made the decision to lower vacuum levels, and that helped reduce somatic cell counts over time. Stalls are bedded with 38% moisture manure solids and mechanically groomed three times each day. The Lambs also have a second dairy that earned Gold honors in this year's NDQA contest. Key staff at the western New York dairy include (L to R): Mary Sweeney, herds person; Alicia and Jonathan Lamb, owners; Keith Keberle, the lead herds person who heads up milk quality; and Juan Diego Cordova Fernandez, herdsman.

rain or snow is forecasted, we place a tarp on the sand pile to limit moisture. Manure is scraped three times a day. The lactating cows are housed in two freestall barns with headlocks. One barn is naturally ventilated with fans and sprinklers. The other barn is tunnel-ventilated with sprinklers over the headlocks.

Endres: We compost our manure digester solids to bed our milk cows. The manure and wet spots are raked from the stalls after each milking. The deep beds are then groomed and we add fresh compost once daily. The manure in the alley is scraped at every milking, and the raw manure is sent to the Middleton Digester. Our tunnel-ventilated barn keeps cows comfortable, constantly adjusting to their ideal temperature and keeping bedding dry. We have fans in our old freestall barn for cow comfort as well.

Lamb: We have six-row freestall barns. Cows are grouped by stage of lactation, milking speed, and parity. We group on milking speed because of our robot rotary parlor. Stalls are deep bedded with dry solids and groomed three times per day. We also scrape alleys three times per day. New bedding is added on a daily basis.

To aid cow comfort, barns are equipped with side fans over stalls and eating areas. In addition, we have hybrid tunnel ventilation (intake plus exhaust fans), thermostat controlled to turn on at 65°F, and center ridge exhaust vents. We feed two times per day and push up every two hours. There are three waterers per 350 cows that are cleaned daily. We also have sprinklers over the feed rail. The barn was designed for the size of the parlor. That means that the stocking density is not more than 100%, so every cow in the barn has a stall to lie in. We believe this enhances milk quality.

RKB: The sand-bedded stalls are groomed twice a day, with any manure and soiled sand in them cleaned out frequently. Sand is added as needed. Manure is scraped from the alleys twice a day. Curtains are adjusted as needed and fans are on thermostats to keep cows comfortable. Sprinklers keep cows cool during the summer. We spray the entire premises for flies and the cows are also sprayed as needed when leaving the parlor.

Rudgers: Our barns have deep-bedded sand freestalls, with wide alleys and cross alleys. New sand is added once per week and stalls are mechanically groomed with a skid steer and rake once per week. The backs of stalls are hand raked at every milking. Alley scrapers constantly run to remove manure. Fans are hung over stalls to help with air movement. In the summer months, we use fly spray to keep flies to a minimum.

What about dry cow comfort?

Crandall: Dry cows are bedded with clean, dry sand weekly. Stalls are cleaned every day by scraping the back ends with a rake. Stalls are also groomed weekly, sometimes more if necessary.

Dolph: Cows are in freestalls with fans and sprinklers. Freestalls are bedded with sand once a week.

Endres: We scrape manure and groom beds once a day. All stalls are deep-bedded freestalls filled with composted manure digester solids. There are fans in the dry cow facility as well.

Lamb: We clean and groom stalls and the alley once a day. Deep-bedded freestalls are bedded with dried solids, and new solids are added every other day. We avoid overcrowding our dry cows. The barns also have sprinklers, fans, and curtains.

RKB: Dry cows are loose housed in an open front shed with an outside lot. They are kept clean and bedded often with cornstalks. In the summer, we remove the panels on the back of the shed to further cool cows. We also spray for fly control.

Rudgers: Dry cows are housed on deep-bedded sand freestalls. Once a week new sand is added, and we mechanically rake stall beds once per week. At every milking, we hand rake the stalls for our dry cows, too. In addition, alley scrapers remove manure. Fans are hung over stalls to maintain fresh air movement.

What steps do you take at dry-off?

Crandall: At dry-off, all cows receive Spectramast DC (ceftiofur hydrochloride) for treatment and Lockout as a teat sealant. This dry-off procedure takes place after the final milking. We wear gloves and thoroughly sanitize the teat ends with an alcohol wipe, using a new wipe for each teat, then admin-

ister the intramammary Spectramast DC, followed by Lockout. The teat sealant is only injected into the teat canal and not up into the mammary tissue.

Dolph: We begin by ensuring all the milk has been removed at the last milking. Then we follow the standard prepping procedure for cow preparation to ensure clean, dry teats. We use new gloves for each cow. Starting with the farthest teat, we clean the teat end with an alcohol pad. Next, we insert Spectramast DC (ceftiofur hydrochloride) into that teat. We repeat the procedures of alcohol pads and treatment on the remaining teats.

To ensure a best case outcome, we clean rinse or change gloves before proceeding to the next step. Starting with the nearest teat, we clean the teat end with an alcohol pad. Next, we insert a teat sealant (Orberseal) in that clean teat. The person dry treating pinches the base of teat (near the udder) and slowly infuses the contents of the tube into the teat. We repeat the procedure of the alcohol pad and sealant on the remaining teats. This helps keep the sealant in the teat, not in the udder. Finally, we postdip the teats with Boumatic Gladiator Super Dry, a chlorine dioxide teat sealant. Dry cows are identified with red leg bands on both rear legs.

Endres: We milk cows following our milking routine and then clean teat ends with alcohol wipes. We treat all of our dry cows with an intramammary dose of Orbenin-DC (cloxacillin benzathine). Next, we use Lockout teat sealant and postdip. We also give 2 cc of J-Vac vaccine treatment intramuscular to each cow.

Lamb: After milking the cow, we prepare and cleanse the teat end. Then we insert one tube of Quartermaster (penicillin-dihydrostreptomycin) in each quarter, intramammary, and massage the quarter. After all four quarters have been dry treated, each quarter is swabbed with an alcohol pad and one tube of Orberseal is inserted into the teat canal. Finally, the teat is postdipped and the cow is moved to the dry cow facility.

RKB: Following their final milking, the rear legs are marked with red livestock chalk. In order to complete dry treatment, the teat is wiped

(Continued on the next page)



RKB Dairy, Faribault, Minn.

This eastern Minnesota herd earned a record-tying seventh Platinum National Dairy Quality Award. The farm is owned and operated by Randy and Kathy Bauer and their son, Glen, who are pictured here. The mother-son duo head up milk quality efforts on the dairy. Like all the Platinum herds, RKB Dairy uses mastitis vaccines on its entire herd. The Bauers administer Vaxxon SRP Klebsiella to their 2-year-old cows and give each cow a booster every year. For years, the Faribault farm family has relied on DHIA SCC reports and the CMT paddle to identify cows with subclinical mastitis. When necessary, Kathy and Glen run milk cultures on clinical mastitis cases to identify the pathogen and develop a more precise treatment strategy. The Bauers also place a high standard on attention to detail and it has paid dividends in milk quality. Shown above are Glen, Kathy, and Randy Bauer.



Rudgers Registered Jerseys, Attica, N.Y.

Milk cultures are a part of the culture at Rudgers Dairy. In the previous 12 months, the farm team handled 41 cases of clinical mastitis on the dairy. In every instance, each case was cultured to identify the pathogen and chart the best therapy. Milk culturing does not stop with the sick cows. "We culture every first-calf heifer," explained Lyman Rudgers. "While we rarely find anything, there have been a few instances where unique mastitis pathogens were found. One time, we identified Prototheca in a first-calf heifer. Since that pathogen is caused by an algae and isn't treatable, we shipped the cow so the situation did not spread in the herd." More recently, the Rudgers placed SCR collars on all the cows, which has made catching sick cows easier. Those in the photo included (L to R): Marina Cox, milker; Chelsey and Lyman Rudgers, with son, Andrew; and Nate Berry, milker.

with an alcohol pad followed by an intramammary infusion of Tomorrow (cephapirin). Next, we slowly infuse an Orbeseal tube and repeat with the other three quarters. The teats are dipped with T-Hexx and immediately moved to the dry cow pen. Finally, the treatment is recorded.

Rudgers: We dry treat our cows with an intramammary by infusing one tube of Quartermaster (penicillin-dihydrostreptomycin) into each quarter. That is followed by an intramammary infusion of Lockout teat sealant, one tube per quarter.

Describe your fresh cow monitoring.

Crandall: After calving, all fresh cows are tested with the California Mastitis Test (CMT) in the parlor. The milk is withheld for a minimum of three days, and we make sure that all of the teat sealant is removed before the milk goes into the bulk tank. If abnormal milk is detected on the CMT, that milk will continue to be withheld and the cow will be treated.

Dolph: In addition to employing recommended fresh cow protocols, we run the CMT test on all quarters and closely monitor Dairy Herd Information Association (DHIA) somatic cell count (SCC) data.

Endres: Mastitis monitoring is done by those employees who milk the cows. We sample the milk from any cow showing signs of mastitis via our in-house milk culturing system.

Lamb: Each fresh cow's milk is harvested for 48 hours in a separate parlor and pasteurized to feed calves. If milk passes visual inspection after 48 hours, the cow is moved to the rotary parlor.

RKB: Fresh cows are kept in a special needs pen, marked with duct tape, and milked at the

end of milking. The strip cup is closely watched and cows also are checked with the CMT. Cows are treated if showing signs of mastitis. All milk is withheld per the dry cow treatment label.

Rudgers: We culture all first-calf heifers three to five days in milk and keep those cows segregated until culture results are back. Second lactation or greater cows are Delva tested after the labeled milk withhold has ended. All cows must test negative prior to joining the regular milking herd.

How do you detect mastitis?

Subclinical:

Crandall: We monitor individual DHIA cow SCC and use the CMT paddle to detect subclinical cases.

Dolph: We use DHIA SCC data and CMT paddle testing to detect subclinical cases.

Endres: We use CMT paddle test and DHIA. If a cow has subclinical mastitis, we culture milk, and cows with a high SCC are milked into a bucket until milk quality improves.

Lamb: The GEA DairyProQ Robot measures conductivity and then a CMT is performed on high-conductivity cows. We have found this system to be very effective as we can obtain conductivity on each quarter.

RKB: We closely monitor DHIA SCC reports and CMT-suspicious quarters. We frequently check suspect quarters and may quarter milk them for a short time until the situation improves. We review the DHIA SCC flex reports to track any problem cows.

Rudgers: We DHI test monthly and monitor SCC.

Clinical:

Crandall: We visually examine the milk when

we strip cows both pre- and postmilking. All milkers are trained on how to identify clinical mastitis on our farm.

Dolph: Milkers look for abnormal milk and swelling during forestripping.

Endres: We look for cows with abnormal milk and/or udder inflammation. In addition, we keep a close eye on cows that are systemically ill. This includes fever, dehydrated, reduced milk production, and mobility issues.

Employees are trained in identifying clinical mastitis. When necessary, milkers perform an aseptic milk sample and then we run a milk culture. In addition, milkers communicate to managers if a cow is physically ill. Then the manager or veterinarian evaluates and treats the cow based on each individual situation.

Lamb: We take a holistic look at the cow by looking for signs of visual distress. This includes swollen quarters, fever, watery or stringy milk, and the presence of flakes or clots. We evaluate the conductivity report on a daily basis. Cows of concern then get a good visual look over. These cows also have milk hand stripped out, milk is tested on a CMT, and temperatures are taken to check for a fever.

RKB: For us, clinical mastitis is abnormal milk from an active infection in the udder, swollen and/or warm quarter, and flakes in the milk. We carefully watch the strip cup and forestripped milk, following up with the CMT. In addition, we watch and feel the udder following milking.

Rudgers: Clinical mastitis is an inflammatory response to an infection, causing visual change to the milk and/or udder. For detection, we forestrip and observe the udder for appearance. 🐄

	Crandall Dairy Farms	Dolph Dairy	Endres Berryridge Farms	Lamb Farms	RKB Dairy	Rudgers Registered Jerseys
Cows (milking/dry)	302/43	460/60	722/105	2,620/267	120/17	270/40
Breed	Holstein	Holstein	Holstein	Holstein	Holstein/Jersey	Jersey
Milk (lbs.)	32,115	33,020	30,450	30,019	26,642/20,061	26,280
Fat (%)	4.2	4.0	4.1	3.9	4.2/5.1	5.0
Protein (%)	3.2	3.2	3.2	3.2	3.2/3.8	3.6
SCC avg.	64,000	75,000	71,000	85,000	41,900	69,000
SPC avg.	1,100	2,000	1,000	2,000	1,000	2,000