

Producing Quality Milk in Florida

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Introduction

Historically, Florida and the southeastern states have always been deficit milk states. Every year in the summer we must import milk, but we export milk in the winter months when the heat stress is gone – until now we were pretty much an island. What happened here stayed here? Another problem is that we are not the only dairymen who are supplying milk to the Southeast. Thanks to the strange milk marketing system we are exporting milk out of the area while other areas are importing milk into the Southeast. This lowers prices for the Southeast dairymen. If we hope to revise these trends some changes to the milk marketing rules must be made. But if we can impress to our local processors that our milk quality is as good or superior to the milk that is being imported, maybe this will keep outside milk out of the Southeast. If we can't even the supply of milk to our own processors, who are we going to sell it to?

Other Opportunities

The world has been changing and changing fast. Floods, earthquakes, tsunamis, governments being overthrown and populations expanding; the burning food in our cars, trucks and farm machinery. World markets are changing also. The US has never been a big exporter of dairy products but in the last few years it has increased and with the shortage of protein in the world it can expand with our ability to overproduce milk in this country. We have a chance to export more dairy products.

The export market has strict standards from size of shipping containers to milk quality standards and probably isn't a standard playing field for the United States, but this export market could bring in higher prices for our milk if we can meet the milk quality standards. While it's doubtful that much of the Southeast's milk will be in the export market, the rules are that all milk in the exporters supply must meet these quality standards. This means the somatic cell count (SCC) of 400,000 cells/ml or below is going to be the export limit and yours also if we wish to compete.

What is Being Done?

Southeast Milk, Inc. (SMI) has had in place a penalty system to lower SCC and has also been concentrating on lowering the Lab Pasteurized Counts (LPC) on your dairy. This is a big step since the LPC is really the indication of shelf life in milk because the bacteria that survive during pasteurization continue to grow and decay the quality of milk. They also have taken a big step in hiring Dr. Adam Jackanicz as their Field Representative. His expertise in the area of milk quality is much needed.

Guidelines to Get to High Quality Milk (SMI)

In April 2011, penalties will be charged if the SCC monthly average is greater than 650,000 cells/ml, bacteria Count (SPC) monthly average is greater than 80,000, or the Preliminary Incubation Count (PI Count) average is greater than 100,000 (no change). Follow these guidelines to avoid penalties:

High SCC Herd Now?

1. Get a bulk tank culture done on the herd, two weeks in a row.
2. Strip every quarter of every cow in the herd. This should be done by someone in management or ownership in the dairy, not by the guy you hired last week.
3. Do something with those cows with high SCC quarters. If she has been treated more than 5 episodes this lactation, dry that quarter off, kill it. If a small herd gets a quarter milker and keep that quarter's milk out of the tank or cull the cow. Dry the cow off early if she is pregnant.
4. If you have a bunch of junk cows, chronic cows, cull them.
5. Treat the quarter with a commercial tube, cleaning the teat end off with alcohol pads. Follow label directions. Some drugs need to be given at 12 hour intervals. Do what the label says.
6. Treat or cull enough quarters to be below the penalty limit.
7. Determine what kind of bacteria you have in the herd from the bulk tank results. If you have a veterinarian you should have some input from him or her. If not, I would be happy to discuss the options with you.
8. Figure out how you got into this mess and how to get out of it: milk clean dry udders, post dip every quarter milked, keep your cows in as clean a place as possible, rebuild your pulsators, clean your vacuum controller, dry treat every cow going dry, mow your careless weeds in all pastures.
9. Cull junk cows and don't make more junk cows!

High SPC Cows, Cooling, Cleaning

1. A bulk tank analysis would help to make a decision. If you have low SCC, low pathogen levels you have eliminated cows as being the cause of the high SPC. If high SCC, see above in high SCC herd now.
2. Cooling is easy. Is the milk cooling fast enough, temperature low enough? You need a thermometer.
3. Get the system checked. Clean the cooling fins, check if the agitator is working. If the tank is iced up get it checked.
4. Cleaning. Is your hot water temperature 160⁰ F at the start of wash, 120⁰F at the dump cycle? Is the air injector working properly?
5. Have your chemicals changed? Inexpensive chemicals are usually less concentrated and more are needed. Are you sanitizing the tank less than a hour before using it? If you use chlorine, some acid rinse sanitizers have a long time limit.

6. Change all rubber hoses, gaskets, jetter cups in the parlor twice a year. Change liners every 1200 cow milking or per label directions. Change all rubber parlor hoses, milk house hoses at least once a year, don't chase milk with water, and don't drink out of them either.

Reasons for High PIC

1. Poor milking hygiene, dirty conditions in lots, stalls and the parlor.
2. Poor wash up procedures and or sanitizing of milking equipment.
3. Poor or slow milk cooling, milk not cooled below 38^o F, blends should not exceed 48^oF
4. Poor water quality.
5. Milk clean dry udders and teats, have proper wash up and sanitizing of milking equipment, cool your milk cold and as quickly as possible.

Laboratory Pasteurized Count (LPC) Reduction Procedures

The LPC test is doing a standard plate count on pasteurized milk. The mastitis pathogens are killed and what remains are organisms that keep on growing in the milk and reduce shelf life. These organisms are not from cows' udders, they are usually spore formers like bacillus or other undesirables like pseudomonas, which live in rubber hoses and are in some water supplies. If a high LPC count is present or in your near future, 250-300 cfu/ml is the usual cut off point, then the following procedures need to be done to ensure you stay below these levels.

1. Milk clean dry pre-dipped teats and udders. Dirty sand bedding and muddy lots are a big supplier of these non-cow bacteria. Milking wet and or dirty teats will load up the tank with them.
2. Replace all rubber parts in the milking parlor: milk hoses, wash hoses, jetter cups, pipeline gaskets, milk pump gaskets and butterfly valves etc. While apart, inspect inside of the pipelines for any build-up or milk stone, including the pipeline from the milk pump to the bulk tank. The hot water supply to the pipeline, bulk tank washers, and all rubber water hoses that may get water into the milk supply. Replace all rubber parts every 6 months. No chasing of milk, especially not with a rubber hose.
3. Wash out pulsator lines. They should have clean outs on the corners so it can be flushed out. Wash out pulsator hoses, remove the twin pulsator hoses from the claw, run hot soapy water through them and the pulsators. Most pulsators will take a quart of water. Rinse pulsators, change hoses if old (when liners split during milking, the milk runs through the pulsators into the pulsator lines and throughout the vacuum system). Dried milk film may be a big problem of high LPCs.
4. Wash out vacuum supply lines, trap to pump, balance tanks etc. (DO NOT RUN WATER INTO VACUUM PUMPS!!!!).
5. Inspect the inside of bulk tanks. You need a black-light or big flash light and a skinny person. Let the tank air out and if any internal cleaning of the tanks is needed, use a non-scratch 3M scrubber and soap and water. Do not use acids or strong chemicals that will kill

the skinny guy in the tank. NEVER COMBINE ACID CLEANERS WITH OTHER CHEMICALS.

6. Make sure air injectors are working properly and chemical concentrations are correct for your system. Have a minimum of 160⁰ F water at the start of the wash cycle and dump the water at 120⁰ F. Sanitization of tanks and pipelines should be 1 hour or less with chlorine sanitizers (some products are longer lasting). Check all labels of all chemicals, you might learn something important. If you only do wash up twice a day and you milk 3X you might try washing the system 3X.
7. Make sure your cooling system is working properly. Chillers are necessary if you have a old tank with little cooling capacity. Ideally, if we never get milk to over 40⁰ F, we will have lower counts.
8. The plate cooler is a good candidate for LPC problems: lots of gaskets etc. If all above fail this is causing the problem. It should be possible to isolate the plate cooler by hooking up the inline samplers in the pipeline in front of and behind the plate cooler and run LPC'S on each sample. If the before sample count is high, it is dirty before the plate cooler. You then need to clean that part of the system and run the test again. If the count before the plate cooler is low and after the plate cooler is high, you tear it down. If neither are high and the bulk tank is high, it's the tank. Inline sampling device suppliers are QMI (www.qmisystems.com) and BoldBioTech (www.boldbiotech.com).
9. Transfer of hoses from the tank to the truck can be a problem also, especially on large dairies where bulk tanks are filled multiple times a day. It is possible that the hose does not get washed and sanitized every time, causing bacterial build up. If emptying of the tank is delayed due to truck dispatch problems and the tank gets washed after being emptied, you can get milkstone build up which allows these bacteria to hide and slough off under the milk stone and increase these bacteria causing LPC problems.
10. These practices are not an expensive process; no cows to treat or cull, just good husbandry practices like keeping cows as clean and cool as possible, milking clean dry teats, have enough hot water and proper chemical concentrations, flushing out your milking system regularly, change rubber parts every six months. You just as well might get used to doing this because these tests are here forever.
11. If none of these changes lower your LPC count, you may have a problem with bio-films on the surfaces of your equipment. These are removed with a more powerful chemical. You should contact your chemical supplier to get the proper chemicals and concentrations to remove them.
12. Bio-films seem to be a bigger problem in larger herds that milk around the clock. Again, you need to probably use high quality chemicals to control them.
13. Another factor may be that dry cow teat sealants may stick to pipelines and harbor undesirable bacteria; you will need better chemicals to remove these residues. Some dry

and lactation antibiotics may cling to surfaces and won't be removed with conventional wash up procedures.

Summary

1. Sell junk cows!
2. Don't make more junk cows!
3. Buy quality chemical products!

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