



Massachusetts Raw Milk Producers' Handbook



This handbook is intended as a guidance document for raw milk producers in Massachusetts. It is based on the laws and regulations as they exist in March 2012. These laws and regulations are subject to change at any time, and producers are encouraged to consult with the NOFA/Mass Raw Milk Network or the Massachusetts Department of Agricultural Resources (MDAR) for updates and clarification.

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By Winton Pitcoff.

Photographs by Michal Lumsden and Winton Pitcoff.

NOFA/Mass is a community including farmers, gardeners, landscapers and consumers working to educate members and the general public about the benefits of local organic systems based on complete cycles, natural materials, and minimal waste for the health of individual beings, communities and the living planet.

The NOFA/Mass Raw Milk Network works to:

- Provide information about raw milk to producers and consumers;
- Work with farmers and regulators to make raw milk production a viable business opportunity;
- Work with regulators to ensure that health and sanitary regulations for raw milk are both effective and scale-sensitive; and
- Reverse township bans on raw milk production.

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The Commonwealth of Massachusetts allows dairy farms to apply for and obtain licenses to sell raw milk directly to consumers who come to the farm to pick it up. Dairies must adhere to strict regulations that dictate how the milk must be produced, handled, stored and sold. These regulations are written and enforced by the Massachusetts Department of Agricultural Resources (MDAR).

Starting a raw milk dairy, like starting any business, can be a daunting process. If you are starting from scratch you will have to deal with many inspections before you even begin milking. Depending on the type of building or renovations you are doing, your facility may need sign-off from your town's building inspector, electrical inspector, plumbing inspector or board of health, even before you approach MDAR about obtaining the certificate that all dairies in the state are required to have.

Each town has different regulations, and each inspector has different ways of operating, so a "how-to" manual for navigating those process-

es is virtually impossible. Most town inspectors are friendly and willing to answer questions though, so don't be afraid to call and inquire. Many small towns that have not been home to dairies in the recent past may not have answers to your questions or know how to handle your project. As the state agency with oversight on dairies, you can always call MDAR for assistance should you run into challenges. They will be able to let you and your town know what licenses and permits are required for the type of facility you plan to operate, and can help you navigate the existing rules. MDAR will also offer to assist you in establishing the most efficient way to build or renovate in order to comply with the applicable laws and regulations.

One thing to be sure to investigate is whether your town's board of health has passed a local ordinance forbidding the sale of raw milk. While town laws can't strictly outlaw raw milk, they can set more stringent thresholds for milk testing than those set by MDAR, effectively banning its sale. Many of these ordinances were passed decades ago. If you are told that

such regulations exist in your town, ask to see a written copy. If they can't produce one, you can challenge the claim that the ordinance exists. If a prohibition is on the books, you can petition your town's board of health to change the law. NOFA/Mass can help you with this process.

Along with being certain that your town will allow you to sell raw milk, you should let your neighbors know your plans. Even if your town is a right-to-farm town, having the support of your neighbors will go a long way toward the success of your raw milk operation. Some towns' right-to-farm ordinances limit what they allow, so the support of abutting property owners should serve to alleviate any concerns. This may prove particularly important if your plans mean having animals where there haven't been animals before, or if there may be an increase in traffic on your street.

It is essential to establish a thorough and effective animal management plan. First and foremost, to produce safe, clean raw milk you need healthy animals. There are as many ways to manage a herd as there are farmers, and many ways to do it well. The Resources section of this handbook (pg. 13) suggests books and other sources of information on grazing, herd health and other issues. While safe raw milk can be produced from grain-fed animals, NOFA/Mass's position is that the best raw milk comes from pastured animals. We also urge raw milk producers to consider organic certification, or to at least employ organic herd management practices. Visit dairies near you and learn from other farmers who sell raw milk.

The bulk of raw milk regulations are no different from those for producing conventional milk to be shipped for pasteurization, and if you are already a dairy farmer the additional requirements for raw milk production are minimal. Rules that govern the type of equipment that can and cannot be used, materials to be used in construction of milking facilities, sanitation standards and other issues are dictated by the U.S. Food and Drug Administration's Pasteurized Milk Ordinance (PMO). You should fa-

miliarize yourself with this document (see Resources section).

This manual assumes a basic knowledge of how to handle animals and operate milking equipment. If you have no experience at all in these areas, interning or working on a dairy farm — or at least spending a significant amount of time on a dairy farm before starting out on your own — is strongly recommended. While most of the practices explained here apply to all dairies, some of the guidelines are specific to cows and may vary somewhat with respect to the milking of goats or sheep.

Keeping your milk clean and safe is all about being vigilant. Pay attention to what you handle and think about what you're going to be touching next. Do you need to stop and wash your hands or change your gloves first? Take note of whether the machines sound right so you can tell if they're operating properly. Understanding how to read your animals and interpret their health status will become an important skill.

Throughout your entire milking process, you should be thinking about traffic — the flow of people and materials in and out of the milking area. Though the floor was clean before you brought the animals in, whatever they stepped in while out in the pasture has now come inside. If you're milking into buckets that are set on the floor, and carrying those buckets into your milkroom, whatever got onto the bottom of that bucket is now making its way into a room that must remain absolutely clean, so check it before you move it. A foot bath — just a tray with water and sanitizing solution — between the milking parlor and the milkroom for you to step into and rinse the soles of your shoes helps keep things clean and safe. Keep an eye on the liquid in the foot bath and change it often enough to prevent it from getting murky, likely every couple of hours if there is a lot of traffic.

The best tool you can have is a written set of step-by-step instructions of every process — cleaning, milking, bottling, etc. Make sure that

every employee knows those routines well and follows the instructions to the letter each time. Similarly, keeping good records of details like who was in charge at each milking; whether there was anything out of the ordinary about a particular animal; weather; and the day's milk production, goes a long way toward helping produce a consistently excellent product.

Preparing the milking parlor

Your milking area must have a floor of impermeable material, usually concrete treated with a sealant — dirt or wood are unacceptable to inspectors. An impervious surface can be scraped and hosed down and won't absorb pathogen-harboring materials. The walls must also be covered with a material that can be hosed down and scrubbed. Bare wood is not allowed under any circumstances.

Good ventilation and lighting in the milking parlor are also important elements in producing clean milk. Proper air flow keeps odors and dust down, and good lighting is critical to your ability to see what you're doing and recognizing when there might be problems.

Before you bring the animals in for milking, check the parlor for cleanliness. Other animals may not be in the milking area. Any manure from the previous milking should have been scraped and removed, and the floor should be clean and dry. Have sawdust or shavings handy, should you need them during milking.

Preparing for milking

Once your animals are settled in their stalls or stanchions, the first step is to make sure that you're clean, so you're not bringing any contaminants into the milking process yourself. Make sure there are no large deposits of manure or dirt on your clothes or boots — brush those loose bits of hay off your hat, too — so you're not at risk of accidentally getting some

on your hands or something falling off into a bucket.

Some farmers wear disposable gloves while milking, but most wash their hands frequently with soap and hot water. If your milking process involves going back and forth between rooms to pour buckets into a tank, move animals in and out of stanchions, or touch any other equipment, wash your hands before returning to an udder. When in doubt, take a moment to go back to the sink and scrub again.

Next, return to the animals to clean their udders, sanitize their teats and 'strip' a few squirts of milk out of each teat to check for abnormali-



ties and to stimulate milk letdown. Some farmers choose to strip before cleaning the teats, while others clean first. There are many ways to remove dirt, manure and other materials from udders to ensure that you're working with nothing but clean, dry teats. Some examples:

- One farm moves down their milkroom aisle with a bucket of clean, dry terrycloth towels. First, one is used to wipe the udder clean. Then a second towel is dipped in an iodine solution and used to clean and sanitize the teats. Each towel is used on one animal only.
- Another method is to use a spray bottle with the iodine solution, and wipe each cow's udder off with a single-use paper towel. There are handy belt-pouches that hold paper towels that work well for this purpose.
- Another farm uses anti-bacterial hand/dish

soap to clean dirty udders, and then peroxide and glycerin instead of iodine for sanitizing teats.

- Many farms use teat-dip bottles designed to measure the right amount of solution and fit around the teat. Others suggest that such an item can spread pathogens from one animal to others. If dip cups are used they should be washed and sanitized and the unused dip discarded after every milking.

While you're doing this, you should also be feeling for abnormalities in the udder. Warning signs like a hot, hard or lumpy udder should be noted and addressed. Each animal's udder feels different, and only by checking them each day will you know when something is wrong with any of your animals.

The sanitizing solution should be on the animal's teats for 30 seconds. Use a single, clean paper towel to wipe the solution off each udder. Be sure to dispose of each towel after one use, to avoid spreading anything from one animal to the next. Using that paper towel (or a fresh one) to avoid touching the teat with your hand, strip each teat — hand-milk a few squirts into a screened teat cup or onto the floor. This is to flush out anything that may have gotten into the teat and to check for clumps, blood or other abnormalities. The screened cup is especially useful for finding small clumps that are early signs of mastitis. If you see anything like this, hold off on milking that animal until last and keep her milk out of your bulk tank. You'll want to check her for mastitis and treat her, if necessary.

Mastitis is the most common dairy disease, and occurs when bacteria grow in the teats and ud-



der. It causes inflammation and, if not treated, can be fatal to animals. Milk from animals with mastitis has a high count of white blood cells. It should not be mixed with milk from healthy animals and should not be consumed. Conventional farmers use antibiotics to treat mastitis, but there are other remedies approved for organic dairies that are effective as well (see Resources section).

Milking

Whether you're using a pipeline system or milking into buckets, the key points for machine milking are the same. Before bringing the animals in,

assemble your milking equipment and run a sanitizing solution through everything. Unscented Clorox is the only brand of bleach allowable for chlorine solutions. Some farmers use iodine solutions instead of chlorine.

Keep the inflations — the only part of the machine that should touch the animal — from touching anything else, especially the ground. Once your machine is running, put the teat cups on her udder one at a time, and give each one a tug to make sure that it is on securely. This is not a time for multitasking — keep an eye on that claw so if it falls off or the animal steps on a hose and tugs it off, it doesn't hit the ground. Thinking that you'll hear the sound change isn't a solution; by the time you hear it the inflation will already be on the ground, sucking up whatever contaminants are there, and you'll need to discard all of the milk that is in the bucket or, even worse, the tank if you're using a pipeline system.

When the animal has been milked out, gently remove the teat cups one at a time and hang

the claw on the bucket or hook, again taking care that they don't touch the ground. Give each teat a post-milking dip or wipe of iodine or an aloe solution with disinfecting properties. Some farmers use an iodine-glycerin post-dip such as Bovadine to prevent mastitis (glycerin is a moisturizer and helps prevent chapped teats). When you stop milking the udder is under negative pressure, sucking in air as it re-expands, and this when it is most vulnerable to pathogens, so the post-milking dip is very important.

Some farmers take this opportunity to weigh the bucket and record how much milk they get from each animal at each milking. It just takes a few seconds per animal, and is invaluable in helping track animal health, breeding cycles, and determining which lines you want to keep in your herd. A hanging scale in the milking parlor with a notebook next to it is all you need. Remember to pour the milk from the bucket into your bulk tank before moving on to the next animal.

To reduce the risk of transmitting any dirt or pathogens between animals, some farmers dip the teat cup inflations in an iodine sanitizer between animals, letting the claw rest in a pail of sanitizer for about 30 seconds, and then allowing it to drip dry for 30 seconds before putting it on the next animal. Be sure that the vacuum is turned off during this process, of course, to avoid sucking the sanitizer into your milk.

If an animal relieves herself during the milking process, scrape any manure into the gutter and put some sawdust or shavings down on the wet area. Don't use a hose on it while you're still milking, because the splashes will send manure and urine

floating. If any manure or urine gets onto the milking equipment you'll need to discard that milk and scrub and sanitize the equipment before starting up again.

Be sure to not let your milking bucket get too full, so as not to draw milk into the vacuum lines. They're hard to clean, and any milk left in there can breed bacteria. When a bucket is full, bring it into the milkroom and pour it slowly and carefully through a paper filter-lined strainer into your bulk tank.

When you're done, let the animals out and head to the milkroom for cleanup.

Cleaning equipment

Cleaning all of the equipment after you've milked is a critical component in making sure that your milk stays clean and healthy. In general, the process involves rinsing off milk residue with lukewarm water (about 95 degrees Fahrenheit), scrubbing with hot (130 to 140 F) soapy water, and rinsing with an acid solution. You'll use a sanitizing solution on the equipment as well, just before your next use.



Cleanup must happen in a room separate from your milking parlor. Because you need to be able to clean and sanitize everything, this room must have impermeable walls and floors. Preferably, the floor will be slanted slightly toward the floor drain. Floors need to be completely sealed, and any cracks that develop should be filled and sealed immediately. Cracks and unsealed concrete cannot be fully cleaned or disinfected. These are great places for pathogens to establish and grow, so it is very important to have a smooth, crack-free floor.

Cleaning equipment that has come into contact with milk should be your priority after milking. Never allow milk to stay on surfaces for any period of time. Rinsing everything with warm water first is important, as hot water will cook the proteins onto the surfaces of the equipment. Some farmers use a manual acid cleaner at this time as well, to remove any sticky bits of milkstone.

Then, wash everything that comes into direct contact with milk. You'll need a two-section stainless steel sink, the first filled with hot water (130 to 140 F, at least) and a heavy-duty alkaline chlorine granular soap, and the second with a 150 parts per million (ppm) chlorine sanitizing solution. Have a box

of chlorine test strips on hand that you can dip into the sink to make sure you're using a strong enough solution. Use of commercially available approved sanitizers must be in accordance with the manufacturer's label, while paying particular attention to required temperatures and contact times. A complete list of approved chemical compounds effective for the sanitization of milk equipment can be found in the Federal regulations (21 CFR 178.1010). Many farmers use an acid bath after rinsing from the soap wash, and then rinse again before using the sanitizer. All equipment must be thoroughly rinsed before the sanitizing step.

Wearing a heavy apron while cleaning is a good idea — the water is HOT. Thick, long rubber gloves are a must. Wash water must be at or above 120 F through the entire cleaning, and the water will cool down as you go through the process, so keep in mind how long it takes you



to clean everything when you set the temperature on your water heater. Lower temperatures will redeposit any milk fats on the equipment.

Disassemble everything all the way down to the individual parts. Take apart fittings, clamps, hoses and anything else that can come apart. Even if you use a pipeline system with an automatic wash setting, the claws should be taken apart and hand cleaned periodically. Clean the insides and outsides of everything, and submerge parts that are small enough to be dunked in the sink. All hoses should be fully submerged as well, and washed with a brush designed to be fed through the length of the hose. The only thing you should not submerge is the pulsator, as water trapped inside can cause it to malfunction, particularly in freezing weather. This is a good time to inspect hoses and rings for cracks. If any of the rubber parts leave black marks on your hands while they are wet, they are breaking down and need to be replaced.



Use brushes that are designed for dairy equipment. Something too soft won't get your equipment clean, and one too abrasive will leave tiny scratches in stainless steel, plastic and rubber parts that will give bacteria a place to hide. Have a number of different size and shape brushes on hand to get into

every corner of every piece of equipment, particularly where there are seams. You'll need narrow, long-handled, flexible brushes that can be fed all the way through hoses, too. Scrub everything well in the soapy water, and then rinse before placing in the sanitizing bath. Dip rubber parts in an iodine solution after sanitizing with the chlorine solution. Chlorine is a strong base, and the iodine solution will help

to neutralize the pH and prevent the rubber from breaking down quickly. Buckets or other tools with milk residue can be hosed off before cleaning in the wash sink, to keep that water from needing to be changed so often. Hose off larger items away from the bulk tank, to avoid splashing in areas where you'll be bottling later. Squeegee the floor and remember to pull up your floor drain covers and scrub them as well.

Do not rinse off the sanitizer. Simply allow everything to air dry on metal racks. Buckets should be placed upside down so that water doesn't pool in them. You want everything to be completely dry when it's time for milking again. Have a system where each part gets put in the same place to dry after every milking. This helps you keep track of your equipment, and makes it easier to find everything at the next milking. Use labels on shelves and walls, if needed, and be sure that all of your relief milkers know and use the same system.

Caps for the ends of the teat cups are handy for keeping dirt and particulate out of the inflations when not in use.

The bulk tank

Your bulk tank needs to be sized properly based on the amount of milk your herd produces. The paddle on the agitator needs to be in the milk for it to properly stir the milk. Milk must be chilled to 40 F or less within two hours of milking. Be careful not to set your tank too cold, as you do not want your milk to freeze. If you milk into a tank that already has milk in it, the temperature of the blended milk should never rise above 50 F.

Milk can only remain in the tank for a maximum of 48 hours before bottling. Once you start bottling, you need to empty the tank completely — do not bottle just a portion of the milk from your tank and then add milk from another milking. This is because of the 'rings' that form inside the tank at the top-line of the milk that's in there. You want to be able to scrub those off when you're cleaning the tank before your next milking.

Rinse your empty bulk tank first with warm water to remove milk residue. To remove milkstone, use an acid wash — either a mild rinse at each milking or a stronger one every week. Next, scrub the tank with soapy hot water. Don't use water hotter than 110 F on your tank, because extreme temperatures can cause the refrigerant coils to burst. Be sure to clean the underside of the lid and remove all fittings from the bottom valve and scrub them in the sink. Use a round bottle brush to thoroughly clean the opening at the bottom of the tank where the valve attaches. Rinse the tank with a chlorine solution right before your next milking.

Before milking, make sure that you've turned on the bulk tank's refrigeration and agitator, and reassembled the valve on the bottom and closed it. It's a terrible feeling to pour fresh milk into your empty tank only to watch it flow out onto the floor of the milkroom!



Bottling

Just like when you are milking, make sure your hat and clothes are clean during bottling, as you don't want anything falling off of you into the bottles of milk. You should have a fitting that attaches a hose to the valve at the bottom of the bulk tank. Make sure you sanitize it before hooking it up to the tank, and never let any part of it touch the ground. A special stainless steel filler pipe for bottling is also available from dairy suppliers. Keep your bottling process in mind when setting up your milkroom. For example, make sure the tank is

high enough off the ground for your bottling apparatus and an empty bottle to fit under it. Bottles may not be set on the floor during the filling process.

Allow a bit of milk to run through the hose or pipe fitting into a jar or other container before filling your first jug, to rinse away any remaining sanitizing solution.

Be sure that the agitator is on for at least three minutes before bottling (to re-mix the cream that has risen to the top) and check to make sure that the temperature is below 40 F. Handle milk gently once it is cool, as the fat molecules in cold milk damage easily and then can go rancid more quickly.

Place the caps you intend to use in a 50 ppm chlorine solution for at least a minute before putting them on the bottles. Again, unscented Clorox is the only brand of bleach approved for this. Caps must be single-use, with a lock seal.

Some farmers wear latex gloves, many just scrub their hands frequently. As you are filling and capping jugs, take care to not spill milk on the outside of the bottles — not just for sanitary reasons, but because the labels many farms use will come off when wet, and you'll need to rinse off any bottles you spill milk on.

If you are using plastic jugs, do not rinse them before filling them. They should be stored in a rodent-proof room and kept in the plastic sleeves they come in until you're ready to fill them.

When using glass bottles, soak them in a hot water and chlorine or iodine sanitizing bath

in a stainless steel sink or large cooler for five minutes before air drying and filling.

When glass bottles are returned by customers, first wash them with soap, then soak them in an acid bath to clean off any milkstone, then a sanitizing chlorine or iodine solution, and allow them to air dry upside down. Use the same cleaning process for plastic milk crates that you use to store or move bottles in. Caps for glass jugs may not be reused.

You may not fill containers brought to you by customers.

Jugs need to have a sell-by date sticker or stamp for five days from the date of bottling. The day of bottling counts as day '0,' so if you fill bottles on Monday the last date of sale would be Saturday.

Each bottle must also be labeled with your farm's name, address and ZIP

code, the words "Raw Cow's Milk" or "Raw Goat's Milk" and the following text:

"Raw milk is not pasteurized. Pasteurization destroys organisms that may be harmful to human health."

The font for this text must be at least 1/16" high, and the words "not pasteurized" must be at least twice the height of the rest of the text on the label.

Selling the milk

Your space for retail sales may not be in the milkroom.

Your retail cooler must be set to keep the milk below 40 F at all times. Have good thermometers in all sections of your refrigerator, as high-



er shelves are often warmer than lower ones, particularly if you have a glass-fronted cooler with a light at the top. Check the temperature daily and record it several times a week to determine if there are patterns; sunlight from a window can have a big effect on your cooler temperature, for instance. And keep the inside of your cooler clean, scrub and sanitize it at least once a week.

A sign must be posted in your sales area, at least 8-by-11 inches in size, with the following statement:

“Raw milk is not pasteurized. Pasteurization destroys organisms that may be harmful to human health.”

The font for this text must be at least 1/2” high, and the words “not pasteurized” must be at least twice the height of the rest of the text in the statement.

Some farms keep a customer list, collecting names and contact information of people who buy milk. MDAR strongly encourages this practice. If a problem with your milk occurs, health officials will require you to notify all of your customers and recall any potentially contaminated milk. If you do not have a complete customer list, health officials will issue a press release to locate and inform those who may have bought milk from you.

Educate your customers about how best to transport and handle the milk so that it stays fresh for as long as possible. Let them know that it is important to keep it cool so that it does not sour. Any time spent above 40 F shortens its shelf-life. And explain that raw milk naturally separates, so they should shake it before serving.



There are no restrictions on how you may advertise that you have raw milk for sale, as long as you are licensed by MDAR to sell raw milk.

Inspections

An inspector from MDAR will come to your farm once a month to take a milk sample that will be sent to a lab for analysis. Every six months the inspector will also conduct a thorough physical inspection of your entire facility. When the inspector arrives, “don’t freak out,” as one farmer put it. The inspector is not there hoping to shut you down, but to help make sure you are following the rules and are producing the best product you can. Another set of eyes can always help find problems in a system, and he or she often offers great suggestions and asks

good questions. Keep in mind that the inspector does have the authority to shut you down if something is terribly wrong, or if you try to keep him or her from doing a thorough inspection. Be respectful and answer the inspector’s questions.

Inspectors can be expected to follow the same rules you would ask any visitor to your farm to follow. If you use foot baths, wear gloves, only enter the milkroom through certain doors, etc., you should ask the inspector to do the same. You are welcome to observe the inspection process, ask questions, and expect impeccable sanitary standards of the person handling your milk samples.

Following each of the biannual facility inspections, you will receive a written report from the inspector. This is a basic checklist (a sample of this checklist is available on page 42) and will

note areas that need attention. You'll be told if these are issues that need to be corrected immediately and a follow-up inspection conducted, or whether the inspector will simply take note of these items on his or her next regular visit.

Inspectors are looking at your entire operation. They will notice and note things like clutter in your work areas, dirt or mold buildup on walls or windowsills, hot water temperature in sinks and cracks in hoses. A recent scan of inspectors' reports from raw milk dairies around the state included comments calling for farmers to remedy a range of issues, including: chipping paint; milkroom doors without a self-closing apparatus; a cat in the milkroom; a trash can without a lid; cobwebs on a ceiling; cracks in the floor; wood drying racks (not allowed); a lack of soap for the hand-washing sink; unsealed gaps in walls where pipelines pass through; a dispenser for milk filters without a lid; and tears in window screens. Inspectors are looking at the physical condition of your facility and at your product, but not necessarily at the processes you follow. Should they find a problem, they may ask to observe your processes, to help figure out where you might make changes that would eliminate the cause.

If the inspector finds what is determined to be an "imminent health hazard" he or she has the authority to suspend your certificate and halt sales immediately.

The inspector will take a sample of milk during the monthly inspection, to be sent to a state-certified laboratory for testing. An inspector can choose to take samples from jugs in your retail cooler, your bulk tank, or both. They should not dip sample cups into your bulk tank; they have stainless steel dippers to pull a sample from the tank to pour into the sample cup, and they sanitize the dipper between samples. When the inspector takes a sample from a bottle in your retail cooler, be sure to remove that bottle so it doesn't get sold. The inspector will check the temperature of the milk in the bottle he or she samples from, and will also check the temperature of the milk in the bulk tank.

If an inspector arrives during or shortly after milking, and the temperature of the milk in your tank has not dropped to 40 F yet, the inspector may either wait and take the sample when the milk is fully cooled, or may reschedule the inspection.

You'll get a report back from the lab within a few days with your results. They are testing your milk on three criteria:

- "Raw count" or "plate count" tests for bacterial colonies, which may not exceed 20,000 per milliliter.
- Coliform count may not exceed 10 per milliliter.
- Somatic cell count may not exceed 750,000 per milliliter.

The monthly tests also screen for antibiotics. In Massachusetts here is zero tolerance for any traces of antibiotics found in milk, to be sold raw to consumers or sent to a pasteurization facility.

If your milk tests above any of the above thresholds or fails the temperature test twice in four consecutive inspections, MDAR will notify you by mail and conduct a follow-up inspection within three weeks. If your milk tests above any of these thresholds or fails the temperature test three times in five consecutive inspections, MDAR will suspend your certificate and you will have to stop selling milk until the problem is fixed. In order for MDAR to halt your sales, the cumulative violations must be for the same issue. For example, if in January your bulk tank temperature is found to be 43 F, in February there are no violations, and in March your coliform count is 12 per milliliter, this is not a two-out-of-four situation, since the violations were for different issues.

While these are the conditions where MDAR must halt sales, the department has the authority to order a farm to stop selling raw milk to the public for lesser violations.

After having your sales halted, when you believe you have found and corrected the cause of the problem, you may request a retest. MDAR has three days from the initial shut down to

return to take another sample, but inspectors usually make every effort to do so sooner.

MDAR has also set standards for what is considered an “imminent health hazard” related to milk testing. If a farm’s raw count is 100,000 or more units per milliliter or coliform is found to be 100 units or more per milliliter, the farm’s certificate will be suspended immediately. Additionally, the department will issue a cease and desist order to any producer whose milk has a positive result for antibiotics.

Raw milk producers are responsible for the cost of the milk testing (currently \$25 per test), and will receive regular bills from the state-approved testing facility (currently Agri-Mark’s Central Laboratory, in West Springfield). Since samples are only valid for 48 hours from collection, and this lab does not do testing on weekends, milk samples are usually not collected from farms on Fridays.

Self testing

Keeping frozen samples of each day’s milk is a good practice. Use a sterile container and label each one with the date and time of milking.

Keep them for three months. While these samples cannot be used for official testing purposes that the state will accept, they can be handy when you are trying to diagnose the source of a potential problem. Testing samples from days before a test that resulted in a high

coliform count, for example, will allow you to pinpoint the day the problem began and perhaps determine the cause, such as a new relief milker, or a change in the way you clean udders.



Similarly, conducting your own tests is a good way to pinpoint problems. Relatively inexpensive equipment is available that will allow you to carry out your own tests. You can place a few drops of milk on a count plate, incubate it for a period of time and easily determine if your milk meets thresholds for bacterial colonies, coliform, or other pathogens. The plates are relatively inexpensive — about \$1 each — and you can make an incubator with a light bulb and a cooler, or even use an egg incubator and a thermometer. Directions and ordering information for these tests are available online (see Resources section). You can also send your own milk samples to a laboratory for testing.

The results of your official test or self-tests can mean many different things. Pay close attention to the numbers you get on your monthly tests — even if your milk passes inspection you might notice trends or abnormal results that demand attention.

A high bacterial count often means a problem with temperature controls, as warm milk allows bacteria to multiply. Check the temperature settings in your cooler and in your bulk tank; it’s always good to have more than one ther-

момeter, so you can check them against each other. You can also use a cup of ice water to check your thermometer — it should read exactly 32 F. Some thermometers can be calibrated by the user. Also check the temperature of your wash water and your

cleaning procedures, to make sure that everything is being cleaned thoroughly. Deteriorating rubber parts are often a culprit as well, as it is impossible to clean all of the milk residue from small cracks in these pieces of equipment,

and that trapped milk is a good place for pathogens to grow.

A high somatic cell count usually points to an animal health issue, as it measures the white blood cells in the milk. Animals late in their lactations also usually have high somatic cell counts, but high counts can also point to mastitis. Frequently, high somatic cell counts are the result of one cow in the herd. You may want to test milk from individual animals to narrow down the source of the where the problem. Then you can isolate that animal's milk from the rest until the problem is resolved. While a count of 750,000 is allowable under current regulations as of this printing, many jurisdictions are changing their guidelines to require a count of 400,000 or lower.

High coliform counts could also mean an ill animal, but most often means that manure or other contaminants have gotten into your milk. Improperly cleaned udders are usually at fault in this case. Often this can be mitigated by cleaning animals' bedding more frequently. Again, old and deteriorating rubber gaskets

or inflations can also be a source for coliform to get trapped and multiply, so inspect and replace these parts often.

High numbers on any of these tests can often simply be the result of animals not being kept clean and dry. Adequate drainage in your yard, regular thorough barn cleanings, and ample pasture to meet the needs of the size of your herd are all key ingredients to producing clean milk.

While meeting the required bacterial, raw and somatic cell counts is good, exceeding them is better. Establish baselines for all of these numbers, and strive to exceed them with each test. Check milk temperatures at every point in the handling cycle often, and keep records on how all of your refrigeration units are performing so you can spot potential problems before they cause trouble. Check water temperature as it comes out of the faucet or hose, and check the temperature of your wash water at the end of your washing process, to make sure that it

meets the requirements for thoroughly sanitizing all equipment.



Resources

The **NOFA/Mass Raw Milk Network** works with raw milk farmers and consumers around the state. Keep up with raw milk issues, news and events at www.marawmilk.org

The first place to contact when you're thinking of starting a raw milk dairy operation is **MDAR**. Their dairy program is online at hwww.mass.gov/agr/dairy/index.htm, and can be reached by calling (617) 626-1813.

Massachusetts' raw milk regulations are online at www.mass.gov/agr/legal/regs/330_CMR_27.00.pdf.

Information on Massachusetts' **right-to-farm laws** are online at www.mass.gov/agr/righttofarm/index.htm.

The FDA's **Pasteurized Milk Ordinance (PMO)** is available at <http://1.usa.gov/wNdWr>.

Raw Milk Production

Two excellent resources for raw milk farmers are available for free from the Farm-to-Consumer Foundation. **The Raw Milk Production Handbook** covers pasture-raised animal management and health, as well as milking and disease control and treatment, and the video **Chore Time** covers facility design, milking, sanitation and more. Both of these are available online at www.farmtoconsumerfoundation.org/fsr/.

Safe Handling — Consumers' Guide: Preserving the Quality of Fresh, Unprocessed Whole Milk, is available for sale online at <https://www.farmtoconsumer.net/EducationalProducts.asp>. It offers procedures for maintaining the quality of raw milk, giving an overview of the best practices of a dairy farm and describing hygienic measures the consumer can follow in transporting and storing milk for consumption at home.

General Dairy Resources

The University of Massachusetts Extension Service has published a series of **best-practices sheets for dairy farmers**, available at <http://extension.umass.edu/cdle/fact-sheets/best-management-practices-dairy>.

Dairy Your Way is a good first read for those considering starting a dairy, available online at www.sare.org/Learning-Center/Project-Products/North-Central-SARE-Project-Products/Dairy-Your-Way.

Starting a Commercial Goat Dairy, published by the University of Vermont, is available online at www.uvm.edu/~susagctr/Documents/Center_GOAT_web.pdf.

There are also many good resources available at the Maryland Small Ruminant website, <http://www.sheepandgoat.com/dairylnk.html>.

Grazing

Prescribed Grazing and Feeding Management for Lactating Dairy Cows, published by the New York State Grazing Lands Conservation Initiative in Cooperation with the USDA-NRCS is an excellent grazing resource, and is available online at <http://grazingguide.net/documents/cow-feeding-mgt.pdf>.

Two periodicals, **Stockman Grass Farmer** (www.stockmangrassfarmer.com) and **Graze** (www.grazeonline.com), are recommended reading for any dairy farmer who wants to learn more about grazing.

Making the Switch tells the stories of two dairy farmers and their transition to grazing. It's available at www.sare.org/Learning-Center/Project-Products/Northeast-SARE-Project-Products/Making-the-Switch.

Organic Certification and Production

To learn about organic dairying and how you can certify your farm, contact **Baystate Organic Certifiers** (www.baystateorganic.org). The **Northeast Organic Dairy Producers Alliance** (www.nodpa.com) is an excellent resource as well.

The **Organic Dairy Handbook: A Comprehensive Guide for the Transition and Beyond**, published by NOFA-NY, is available for free online at <http://bit.ly/ymUsKl>.

Organic Dairy Farming: A Resource for Farmers, edited by Jody Padgham is available for purchase from MOSES at www.mosesorganic.org.

Organic Dairy Production, by Sarah Flack, is available for purchase at www.chelseagreen.com.

Finding Animals

The **Northeast Organic Dairy Producers Alliance** (www.nodpa.com) often has listings of dairies with cows for sale.

Contact the **American Dairy Goat Association** (www.adga.org), local milking farm or registered breeders if you're looking for goats.

Equipment and Supplies

Bob White Systems (www.bobwhitesystems.com) makes equipment for small dairies.

Nelson Jameson (www.nelsonjameson.com) sells milking and sanitation supplies.

Parts Department (www.partsdeptonline.com) sells milking equipment and supplies.

Online Labels (www.onlinelabels.com) sells blank, waterproof labels that you can print on your own printer.

Bottles

Stanpac (www.stanpacnet.com/dairy_packaging.html) sells glass bottles.

Shelburne Plastics (www.shelburneplastics.com) sells plastic milk jugs.

Spring Hill Farm (www.springhillwater.com) in Ward Hill, Mass., will sell small quantities of plastic jugs.

Health

Information on treating mastitis without antibiotics can be found at www.mosesorganic.org/attachments/productioninfo/07ovmastitis.pdf.

Many good livestock health resources can be found on the website of the **Northeast Organic Dairy Producers Alliance**, at www.nodpa.com/production.shtml.

Testing

Self-testing equipment is available for purchase directly from **3M** at http://solutions.3m.com/wps/portal/3M/en_US/Microbiology/FoodSafety/industries/one/.

Nelson-Jameson (www.nelsonjameson.com/) also sells testing supplies.

A list of Massachusetts **labs approved by the USDA** for milk testing is available at <https://info1.cfsan.fda.gov/milk/mkex/ims/imslb-ne.cfm>.

Massachusetts Raw Milk Regulations and Laws

Below are regulations and laws relevant to the production and sale of raw milk in Massachusetts, as of April 10, 2012. The authors of this manual have provided for reference summaries for many sections, found in a box above the section itself. Note that the 'Department of food and Agriculture' is now called the Department of Agricultural Resources.

330 CMR: DEPARTMENT OF FOOD AND AGRICULTURE
330 CMR 27.00: STANDARDS AND SANITATION REQUIREMENTS FOR GRADE A RAW MILK (http://www.mass.gov/agr/legal/regs/330_CM_27.00.pdf, 4/10/2012)

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27.01: Scope and Purpose

330 CMR 27.00 establishes standards and sanitation requirements for raw milk and milk products for pasteurization, ultra pasteurization or aseptic processing and standards and sanitization requirements for raw milk for retail sale. It is applicable to all regulations filed pursuant to M.G.L. c. 94, § 13. It describes the requirements for producing and processing raw milk by all producers holding a Massachusetts Dairy Farm Certificate of Registration. The purpose of 330 CMR 27.00 is to provide sanitary standards for the production, processing, and sale of fluid milk.

27.02: Definitions

The following definitions shall apply in the interpretation and enforcement of 330 CMR 27.00:

Adulterated - in the case of milk or milk products, means the definition in M.G.L. c. 94, § 186 which pertains to food.

Aseptic Processing - means the process whereby milk or a milk product has been subjected to sufficient heat processing and packaged in a hermetically sealed container in conformance with the applicable requirements of 21 CFR 113 and the provisions of 105 CMR 541.010(S), (T) and (U) to maintain the commercial sterility of the product under normal nonrefrigerated conditions.

Board of Health - means the appropriate and legally designated health authority of the city, town, or other legally constituted governmental unit within the Commonwealth of Massachusetts having the usual powers and duties of the board of health of a city or town.

Bulk Milk Pickup Tanker - means a vehicle, including the truck and tank and those appurtenances necessary for its use, used by a milk hauler to transport bulk raw milk for pasteurization from a dairy farm to a transfer station, receiving station or pasteurization plant.

Bureau - shall mean the Bureau of Dairying in the Division of Regulatory Services of the Massachusetts Department of Food and Agriculture.

Certificate of Registration and Certification - means approval by the Commonwealth of Massachusetts to produce and sell milk as provided by M.G.L. c. 94, § 16.

Commissioner - means the Commissioner of the Department of Food and Agriculture.

Dairy Farm - means a place or premises where more than two cows are kept and a part or all of the milk produced thereof is sold or delivered for sale to any person.

Department - means the Massachusetts Department of Food and Agriculture.

Director - means the Director of the Division of Regulatory Services.

Drug - means articles recognized in the official United States Pharmacopeia, official Homeopathic Pharmacopeia of the United States, or the official National Formulary, or any supplement to any of them; and articles intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in humans or other animals, and articles (other than food) intended to affect the structure or any function of the body of humans or other animals, and; articles intended for use as a component of any articles specified in the above, but does not include devices or their components, parts or accessories.

Grade "A" - means milk and milk products which comply with the provisions of 330 CMR 27.00.

Grade "A" Fluid Milk and Milk Products - shall include skim milk, lowfat milk, buttermilk, cultured buttermilk, acidified buttermilk, cultured skim milk, acidified milk, acidified lowfat milk, acidified skim milk, low sodium milk, lactose-reduced acidified milk, lactose-reduced skim milk, ultra pasteurized milk, aseptically processed and packaged milk, milk or lowfat milk or skim milk with added safe and suitable microbial organisms, and any other milk products made by the addition or subtraction of milk fat or addition of safe and suitable optional ingredients for protein, vitamin, or mineral fortification herein, irrespective of the way that the product is flavored, and any other dairy product designated by the Commissioner.

As defined here, "Fluid milk and Milk Products" is not intended to include products such as butter, cottage cheese, lowfat cottage cheese, dry curd cottage cheese, hard and soft cheeses, cream, light cream, light whipping cream, whipped cream, whipped light cream, sour cream, acidified sour cream, cultured sour cream, dietary products, half-and-half, infant formula, ice cream and other desserts, concentrated milk, concentrated milk products, condensed milk, dry milk and milk products, evaporated milk, evaporated skim milk, reconstituted or lowfat yogurt, nonfat yogurt, whey, condensed and dry whey, and whey products, or any other dairy product designated by the Commissioner, except when they are combined with other substances to produce any pasteurized, ultra-pasteurized, or aseptically processed milk or milk product defined herein.

Any product referred to in this definition shall comply with the provisions of 330 CMR 27.00.

Law - means all applicable federal, state and local statutes, ordinances and regulations.

Milk - means the lacteal secretion, practically free from colostrum, obtained by the complete milking of one or more healthy cows or goats. Milk that is in final package form for beverage use shall contain not less than 8.25% milk solids not fat and not less than 3.25% milkfat for cow milk. Goat milk shall contain not less than 2.5% milkfat and not less than 7.5% milk solids not fat. Milk may be adjusted by separating part of the milkfat therefrom or by adding cream thereto.

Milk Dealer - means any person who offers for sale or sells to another any milk or milk product.

Milk Plant - means any place, premises or establishment where milk or milk products are collected, handled, processed, stored, pasteurized, aseptically processed, bottled, or prepared for distribution.

Milk Producer - means any person who operates a dairy farm and provides, sells, or offers milk for sale to a milk plant, receiving station or transfer station, or as raw for retail.

Milk Tank Truck - means either a bulk milk pickup tanker or a milk transport tank.

Milk Transport Tank - means a vehicle, including the truck and tank, used by a milk hauler to transport bulk shipments of milk or milk products from a transfer station, receiving station or milk plant to another transfer station, receiving station or milk plant.

Misbranded - in the case of milk and milk products, means the definition in M.G.L. c. 94, § 187 which pertains to food.

Official Laboratory - an official laboratory is a biological, chemical, or physical laboratory which is under the direct supervision of the state or a local regulatory agency.

Officially Designated Laboratory - an officially designated laboratory is a commercial laboratory authorized to do official work by the regulatory agency, or a milk industry laboratory officially designated by the regulatory agency for the examination of producer samples of Grade A raw milk for pasteurization and commingled milk tank truck samples of raw milk for antibiotic residues and bacterial limits.

Pasteurization or Pasteurized - or a similar term means the process of heating every particle

of milk or milk product, in properly designed and operated equipment, to one of the applicable temperatures described in 105 CMR 541.010(P) and holding every such particle continuously at or above that temperature for at least the corresponding time specified.

Pasteurization Plant - means any place, premises or establishment where raw milk, milk or milk products are pasteurized, ultra-pasteurized or aseptically processed. A pasteurization plant may include milk plants, receiving stations, and transfer stations.

Person - means any individual, plant operator, partnership, corporation, company, firm, trustee, association or institution.

Potable Water Source - means any source or supplier of water approved by the Department of Environmental Protection or the Department of Public Health.

Raw Milk for Pasteurization - means Grade "A" milk and raw products thereof which comply with sanitary standards for production, transportation, receiving, handling, storage, processing, distribution and sale as determined by the Commissioner of Food and Agriculture in 330 CMR 27.00.

Receiving Station - means any place, premises, or establishment where raw milk is received, collected, handled, stored, or cooled and prepared for further transporting.

Regulatory Agency - means the Massachusetts Department of Food and Agriculture and its subdivisions.

Sanitization - means the application of any effective method or substance to a clean surface for the purpose of inactivation or destruction of pathogens, and of other organisms as far as is practicable. Such treatment shall not adversely affect the equipment, the milk or milk product or the health of consumers, and shall be acceptable to the Department.

Sterilized - as applied to piping, equipment or containers used for milk and milk products, means the condition achieved by application of heat, chemical sterilant(s), or other appropriate treatment that renders the piping, equipment or containers free of viable microorganisms.

Transfer Station - means any place, premises or establishment where milk or milk products are transferred directly from one milk tank truck to another.

Ultra Pasteurized - means thermally processed at or above 280°F (138°C) for at least two seconds, either before or after packaging, so as to produce a product that has an extended shelf life when kept at 45°F or below.

3-A Sanitary Standards - for dairy equipment are promulgated jointly by the Sanitary Standards Subcommittee of the Dairy Industry Committee, the Committee on Sanitary Procedure of the International Association of Milk, Food and Environmental Sanitarians, Inc., and the Milk Safety Branch, Bureau of Foods, Food and Drug Administration, Public Health Service, Department of Health and Human Services. Equipment manufactured in conformity with 3-A Sanitary Standards complies with the sanitary design and construction standards of 330 CMR 27.00.

27.03: Animal Health

SUMMARY

The Commonwealth of Massachusetts is USDA-accredited bovine tuberculosis-free, and is classified brucellosis-free.

(A) All milk for manufacturing or processing shall be from herds which are located in an accredited free bovine tuberculosis area as determined by the U.S. Department of Agriculture; provided, that the herds located in an area that fails to maintain such accredited status shall have been accredited by the Department as tuberculosis free or shall have passed a full herd tuberculosis test within one year from the date of the preceding test.

(B) All milk for pasteurization shall be from herds under the cooperative State-Federal brucellosis eradication program and located in a classified brucellosis-free, or Class A state, as defined by the U.S. Department of Agriculture. If located in Class B or C states, they shall meet U.S. Department of Agriculture requirements for an individually certified herd. All brucellosis reactors disclosed on blood agglutination tests shall be separated immediately from the milking herd.

(C) For diseases other than brucellosis and tuberculosis, the Commissioner may require such physical, chemical or bacteriological tests as he deems necessary. The diagnosis of other diseases in dairy cattle shall be based upon the findings of a licensed veterinarian or a veterinarian in the employ of the Department of Food and Agriculture. Any diseased animal disclosed by such test(s) shall be disposed of as the Department directs.

27.04: Personnel Health

SUMMARY

If a farmer or farm worker is sick with any disease that can be transmitted to others, he or she may not handle milk.

(A) Prohibition. No person affected with any disease in a communicable form, or while a carrier of such disease, shall work at any dairy farm in any capacity which brings him into contact with the production, handling, storage, or transportation of milk, milk products, containers, equipment and utensils; and no dairy farm operator shall employ in any such capacity any such person, or any person suspected of having any disease in a communicable form, or of being a carrier of such disease. Any producer or distributor of milk or milk products, upon whose dairy farm any communicable disease occurs, or who suspects that any employee has contracted any disease in a communicable form, or has become a carrier of such disease, shall notify the department immediately.

(B) Procedure when Infection is Suspected. When reasonable cause exists to suspect the possibility of transmission of infection from any person concerned with the handling of milk and/or milk products, the department is authorized to require any or all of the following measures:

- (1) The immediate exclusion of that person from milk handling.
- (2) The immediate exclusion of the milk supply concerned from distribution and use.

(3) Adequate medical and bacteriological examination of the person, of her/his associates, and of her/his and their body discharges.

27.05: Standards for Grade “A” Raw Milk for Pasteurization, Ultra Pasteurization and Aseptic Processing

SUMMARY

This section applies exclusively to milk being shipped off-farm for processing, not unpasteurized milk to be sold to consumers. It is included here as reference.

All Grade A raw milk for pasteurization, ultra pasteurization or aseptic processing shall be produced to conform with the following chemical, bacteriological, and temperature standards, and the sanitation requirements of 330 CMR 27.07.

GRADE A RAW MILK FOR PASTEURIZATION, ULTRA PASTEURIZATION ASEPTIC PROCESSING

Temperature: Cooled to 40°F (4.45°C) or less within two hours after milking, provided that the blend temperature after the first and subsequent milkings does not exceed 50°F (10°C).

Bacterial Limits: Individual producer milk shall not exceed 100,000 per ml. prior to commingling with other producer milk. Individual producer milk shall not exceed 2,500 per ml. after laboratory pasteurization.

Optional Preliminary Incubation Count when used: Individual producer milk shall not exceed 100,000 per ml.

Drugs: No zone greater than or equal to 16mm with Bacillus Sterothermophilus disc assay method specified in Appendix G of the most recent edition of the PMO or any other method approved by the department. No Individual producer milk shall have a positive result for drug residue in excess of the allowable level in the most recent edition of the PMO.

Somatic Cell: Individual producer milk shall not exceed 1,000,000 per ml. Beginning July 1, 1993 individual producer milk shall not exceed 750,000 per ml.

Cryoscope: (-)0.525°C unless proved to be free of added water.

27.06: Standards for Grade "A" Raw Milk for Retail Sale

SUMMARY

This section sets the standards for raw milk. These are the numbers that milk samples are to be tested against.

All Grade "A" raw milk for retail sale shall be produced and handled to conform with the following chemical, bacteriological, and temperature standards, and the sanitation requirements of 330 CMR 27.06

GRADE "A" RAW FOR RETAIL MILK

Temperature: Cooled to 40°F (4.45°C) or less within two hours after milking, provided that the blend temperature after the first and subsequent milkings does not exceed 50°F (10°C).

Bacterial Limit: Individual producer milk shall not exceed 20,000 per ml.

Coliform: Not to exceed 10 per ml.

Drugs: No zone greater than or equal to 16mm with Bacillus Sterothermophilus disc assay method specified in Appendix G of the most recent edition of the PMO or any other method approved by the department. No Individual producer milk shall have a positive result for drug residue in excess of the allowable level in the most recent edition of the PMO.

Somatic Cell: Individual producer milk shall not exceed 750,000 per ml.

Cryoscope: (-)0.525°C unless proved to be free of added water.

27.07: Sanitation Requirements For Grade "A" Raw Milk

SUMMARY

This section applies to dairy farms producing any milk, whether it is intended for pasteurization or not. Some key sections include:

- A requirement that cows producing abnormal milk be milked last and the milk from that animal not be mixed with that of the rest of the herd.
- Basic design and construction requirements for milking facilities.
- Requirements that other livestock be excluded from the milking parlor, and pigs be kept out of the cowyard.
- Explanations of what is expected of milking equipment, such as seamless milk pails, and standards for cleaning and storing such equipment.
- Hand-washing requirements (a separate hand-washing sink is required in or near the milkroom).
- Cooling requirements are included in this section, stating that all milk must be cooled to 40 F or less within two hours after milking. Milk from a milking may be added to a tank that already has chilled milk from a previous milking, but such addition must not increase the temperature of the blended milk above 50 degrees.
- Milk rooms must be free of insects and rodents.

The following requirements shall be applicable to raw milk for pasteurization, ultrapasteurization or aseptic processing and Grade A raw milk for retail sale.

(A) Abnormal Milk. Cows which show evidence of the secretion of abnormal milk in one or more quarters, based upon bacteriological, chemical, or physical examination, shall be milked last or with separate equipment and the milk shall be discarded. Cows treated with, or cows which have consumed chemical, medicinal or radioactive agents which are capable of being secreted in the milk and which, in the judgement of the regulatory agency, may be deleterious to human health, shall be milked last and the milk disposed of as the department may direct.

(B) Milking Barn, Stable, or Parlor -- Construction. A milking barn, stable, or parlor shall be provided on all dairy farms in which the milking herd shall be housed during milking time operations. The areas used for milking purposes shall:

- (1) In the case of new construction, have floors constructed of concrete or equally impervious material that are easily cleanable. Convalescent (maternity) pens located in milking areas of stanchion-type barns may be used subject to departmental approval;
- (2) Have walls and ceiling which are smooth, painted or finished in an approved manner, in good repair, the ceiling shall be dust tight;
- (3) Have separate stalls or pens for horses, calves, and bulls;
- (4) Be provided with natural and/or artificial light, well distributed for day and/or night milking;
- (5) Provide sufficient air space and air circulation to prevent condensation and excessive odors;
- (6) Not be overcrowded;
- (7) Have dust tight covered boxes or bins, or separate storage facilities for ground, chopped, or concentrated feed.

(C) Milking Barn Stable or Parlor -- Cleanliness. The interior shall be kept clean. Floors, walls, ceilings, windows, pipelines, and equipment shall be clean. Swine and fowl will be kept out of the milking barn.

(D) Cowyard. The cowyard shall be graded and drained and shall have no standing pools of water or accumulations of organic wastes: provided, that in loafing or cattle-housing areas, cow droppings and soiled bedding shall be removed, or clean bedding added, at sufficiently frequent intervals to prevent the soiling of the cow's udder and flanks. Waste feed shall not be allowed to accumulate. Manure packs shall be properly drained and shall provide a reasonably firm footing. Swine shall be kept out of the cowyard.

(E) Milkhouse or Room -- Construction and Facilities.

(1) A milkhouse or room of sufficient size shall be provided, in which the cooling, handling, and storing of milk and the washing, sanitizing, and storing of milk containers and utensils shall be conducted: Except as provided for in 330 CMR 27.07(L).

(2) The milkhouse shall be provided with a smooth floor constructed of concrete or equally impervious material graded to drain and maintained in good repair. Liquid waste shall be disposed of in a sanitary manner; all floor drains shall be accessible and shall be trapped if connected to a sanitary sewer system.

(3) The walls and ceilings shall be constructed of smooth material, in good repair, well painted, or finished in an equally suitable manner.

(4) The milkhouse shall have adequate natural and/or artificial light and be well ventilated.

(5) The milkhouse shall be used for no other purpose than milkhouse operations; there shall be no direct opening into any barn, stable, or into a room used for domestic purposes: provided, That a direct opening between the milkhouse and milking barn, stable, or parlor is permitted when a tight-fitting, self-closing solid door(s) hinged to be single or double acting is provided.

(6) Hot and cold water under pressure shall be piped into the milkhouse.

(7) The milkhouse shall be equipped with a two-compartment wash vat and adequate hot water heating facilities.

(8) A properly constructed cooling tank of sufficient size and depth or other approved cooling facilities shall be provided in the milk house, milkroom or other approved location.

(9) The cooling facilities shall be used for no other purposes than the cooling and storage of milk. They shall be protected from contamination and maintained in a sanitary condition.

(10) When a transportation tank is used for the cooling and/or storage of milk on the dairy farm, such tank shall be provided with a suitable shelter for the receipt of milk. Such shelter shall be adjacent to, but not a part of, the milkroom and shall comply with the requirements of the milkroom with respect to construction, light, drainage, insect and rodent control, and general maintenance.

(F) Milkhouse or Room -- Cleanliness. The floors, walls, ceilings, windows, tables, shelves, cabinets, wash vats, non-product contact surfaces of milk containers, utensils and equipment and other milkroom equipment shall be clean. Only articles directly related to milkroom activities shall be permitted in the milkroom. The milkroom shall be free of trash, animals, and fowl.

(G) Toilet. Every dairy farm shall be provided with one or more toilets, conveniently located and properly constructed, operated, and maintained in a sanitary manner. The waste shall be inaccessible to flies and shall not pollute the soil surface or contaminate any water supply.

(H) Water Supply. Water for milkhouse and milking operations shall be from a potable water source properly located, protected, and operated, and shall be easily accessible, adequate and of a safe, sanitary quality.

(I) Utensils and Equipment -- Construction.

(1) All multiuse containers, equipment, and utensils used in the handling, storage, or trans-

portation of milk, or with which milk or milk products otherwise come into contact, shall be made of smooth, nonabsorbent, corrosion-resistant, nontoxic materials, and shall be so constructed as to be easily cleaned. All containers, utensils, and equipment shall be in good repair. All milk pails shall be seamless and milk pails used for hand milking shall be of the hooded type. Multiple-use woven material shall not be used for straining milk. All single-service articles shall be non-toxic and have been manufactured, packaged, transported, and handled in a sanitary manner. Articles intended for single-service use shall not be reused.

(2) Farm holding/cooling tanks, welded sanitary piping, and transportation tanks shall comply with 3-A Sanitary Standards.

(J) Utensils and Equipment -- Cleaning. The product-contact surfaces of all multiuse containers, equipment, and utensils used in the handling, storage, or transportation of milk shall be cleaned after each usage.

(K) Utensils and Equipment -- Sanitization. The product-contact surface of all multi-use containers, equipment and utensils used in the handling, storage or transportation of milk shall be sanitized before each usage.

(L) Utensils and Equipment -- Storage. All containers, utensils and equipment used in the handling, storage, or transportation of milk, unless stored in sanitizing solutions, shall be stored to assure complete drainage, and shall be protected from contamination prior to use provided that pipeline milking equipment such as milking claws, inflations, weigh jars, meters, milk hoses, milk receivers, tubular coolers, plate coolers and milk pumps which are designed for mechanical cleaning and other equipment as accepted by FDA, which meets these criteria may be stored in the milking barn or parlor provided this equipment is designed, installed and operated to protect the product and solution-contact surfaces from contamination at all times.

(M) Utensils and Equipment -- Handling. After sanitization, all containers, utensils, and equipment shall be handled in such manner as to prevent contamination of any product-contact surface.

(N) Milking -- Flanks, Udders, and Teats. Milking shall be done in the milking barn, stable, or parlor. The flanks, udders, bellies, and tails of all cows shall be free from visible dirt. All brushing shall be completed prior to milking. The udders and teats of all milking cows shall be clean and dry before milking. Teats shall be treated with a sanitizing solution just prior to the time of milking, and shall be wiped dry before milking. Wet hand milking is prohibited.

(O) Milking -- Surcingles, Milk Stools, and Antikickers. Surcingles, milk stools, and antikickers shall be kept clean and stored above the floor.

(P) Protection from Contamination. Milking and milk house operations, equipment, and facilities shall be located and conducted to prevent any contamination of milk, equipment, containers, and utensils. No milk shall be strained, poured, transferred, or stored unless it is properly protected from contamination.

(Q) Personnel -- Hand-Washing Facilities. Adequate hand-washing facilities shall be provided, including a lavatory fixture with running water, soap or detergent, and individual sanitary towels, convenient to the milkhous, milking barn, stable, parlor, and flush toilet.

(R) Personnel -- Cleanliness. Hands shall be washed clean and dried with an individual sani-

tary towel immediately before milking, before performing any milkhouse function and immediately after the interruption of these activities. Milkers and milk haulers shall wear clean outer garments while milking or handling milk, milk containers, utensils, or equipment.

(S) Cooling. Raw milk for pasteurization or retail sale shall be cooled to 40°F (4.45°C) or less within two hours after milking: Provided, that the blend temperature after the first milking and subsequent milkings does not exceed 50°F (10°C).

(T) Vehicles. Vehicles used to transport milk from the dairy farm to the milk plant or receiving station shall be constructed and operated to protect their contents from sun, freezing, and contamination. Such vehicles shall be kept clean, inside and out and no substance capable of contaminating milk shall be transported with milk.

(U) Insect and Rodent Control. Effective measures shall be taken to prevent the contamination of milk, containers, equipment, and utensils by insects and rodents and by chemicals used to control such vermin. Milk rooms shall be free of insects and rodents. Surroundings shall be kept neat, clean, and free of conditions which might harbor or be conducive to the breeding of insects and rodents.

27.08: Additional Requirements For Grade "A" Raw Milk For Retail Sale

SUMMARY

This section is critical for raw milk producers, as it states the additional requirements, above and beyond those in the preceding section, for raw milk handling. Some key points include:

- All milk must be kept below 40 F at all times. Options for refrigeration units are described.
- Dairies may not fill containers provided by customers.
- Bottling may be done by hand at small facilities.
- Caps must be tamper-evident, soaked in a 50 ppm solution of chlorine for a full minute and then immediately placed on the bottle.
- Gloves must be worn while bottling or hands must be washed and sanitized.
- Milk must be withdrawn through a valve on the tank, not dipped from the tank.
- Each container of milk must have a sell-by date of five days from filling.
- Milk cannot be stored in a bulk tank for more than 48 hours before bottling.
- Labels on milk containers for sale must include:
 - The name and address of the farm.
 - "Raw milk is not pasteurized. Pasteurization destroys organisms that may be harmful to human health."
 - The regulation stipulates the size of the lettering.
- A sign in the sales area must be posted that reads, "Raw milk is not pasteurized. Pasteurization destroys organisms that may be harmful to human health." The regulation stipulates the size of the sign and lettering.

The following requirements shall be applicable to raw milk for retail sale, in addition to the requirements in 330 CMR 27.07.

(A) Storage. Milk shall be stored in an approved milk tank or stainless steel cans. All containers shall be stored at 40°F (4.45°C) or below in facilities which have been approved by the commissioner or her/his agent. A commercial refrigeration unit constructed of impervious material that is smooth and easily cleaned may be used for the purpose of storing retail raw milk in containers. A household refrigeration unit in good mechanical and physical condition is also permitted. All facilities shall be equipped with an accurate thermometer graduated in no more than two degree increments. The use of wet storage facilities shall be prohibited under all circumstances for the handling of consumer type containers.

(B) Containers. All sanitary containers shall be provided/supplied by the dairy. All containers shall be stored in a manner that minimizes contamination of the containers. Single-service containers and lids must come from an approved source and not be reused. Returnable containers must be washed, rinsed, and sanitized before refilling. Lids for returnable containers shall not be reused.

(C) Bottling and Capping. All bottling and capping of Grade A raw milk for retail sale shall be done on approved mechanical equipment, except for those dairies where volume causes this to be impractical. All caps shall be designed and constructed so that the removal of such caps cannot be made without detection. Hand capping is allowed provided:

- (1) All caps or lids must be kept immersed in a 50 ppm solution of chlorine for a minimum of one minute and immediately placed on a container.

- (2) Operator must wear disposable plastic gloves while filling and capping, or hands must be thoroughly washed and sanitized prior to and during operations.
- (3) Milk is withdrawn through bottom (outlet) valve of tank. "No Dipping."
- (4) Filling of containers must be done in a sanitary manner to preclude possible contamination: container filling by the consumer is prohibited.

(D) Date. The date on the container of retail raw milk shall indicate the last date on which the container may be offered for sale. There shall be a five day maximum period for the sale of retail raw milk which shall commence from the time of filling. Said five day maximum period may be shortened by the Commissioner if she/he deems such modification to be in the best interest of the consumer.

(E) Labeling. The name of the product is Raw Cow's Milk or Raw Goat's Milk and shall be so plainly labeled. The label shall contain the name, address and zip code of the producing farm.

(F) Consumer Warning Statement

- (1) All retail containers of raw cow's or raw goat's milk shall be conspicuously labeled with the following statement: "Raw milk is not pasteurized. Pasteurization destroys organisms that may be harmful to human health". The minimum size of the printed words shall not be less than 1/16 inch in height, with the words "not pasteurized" being not less than 1/8 inch in height or twice the height of any other lettering in the label, whichever is greater.
- (2) A sign must be posted in the area where the raw milk is sold and placed in a location where it can be easily observed by anyone entering therein. Such sign shall not be less than eight by eleven inches in total dimension and shall display the following statement: "Raw milk is not pasteurized. Pasteurization destroys organisms that may be harmful to human health." The minimum size of the printed words shall not be less than 1/2 inch in height, with the words "not pasteurized" being not less than one inch in height.

(G) Sales and Storage. Milk cannot be offered for sale or consumption if such milk has been stored in a bulk tank or other approved storage container beyond 48 hours. All bulk tanks or other approved storage containers must be cleaned and sanitized before reuse.

27.09: Review of Plans for Construction or Remodeling of Milking Centers

SUMMARY

When constructing or remodeling a dairy facility, farms should consult with MDAR first.

When a milking center or potable water source is to be constructed or extensively remodeled, or an existing structure is to be converted for use as a milking center, properly prepared plans and specifications for such construction, remodeling or alteration, showing layout, arrangement and construction materials of work areas, and the location, size and type of fixed equipment and facilities, shall be submitted to the Bureau, or the appropriate out-of-state regulatory authority for approval before such work is begun.

27.10: Administration and Enforcement**SUMMARY**

This section gives MDAR the authority to enforce all of the regulations in this section, using “whatever action is necessary to effect compliance.”

(A) General Administration. The following provisions shall cover the administration and enforcement of 330 CMR 27.00.

(B) State Enforcement

(1) The Department may enforce 330 CMR 27.00 by suspension or revocation of certificates of registration in accordance with 330 CMR 27.016.

(2) If the Commissioner or her/his agent determines, as a result of any study, inspection or survey made by the Department, that compliance with 330 CMR 27.00 has not been effected, she/he shall take appropriate action to effect compliance.

(3) Notwithstanding any other provision of 330 CMR 27.00, if the Commissioner or her/his agent determines that an imminent health hazard exists, resulting from the operation of a dairy farm, she/he may without prior notice to the board of health take whatever action is necessary to effect compliance with 330 CMR 27.00.

(C) Interpretation of Regulations. The Department may from time to time issue written interpretations and guidelines as necessary to promote uniform application of 330 CMR 27.00. The Department may advise the certificatee or the board of health on particular questions regarding interpretations of 330 CMR 27.00.

27.11: Certificate of Registration: Issuance**SUMMARY**

All dairies of any size, selling any amount of milk, must be registered with MDAR. The certificate must be posted in the milkroom and is not transferable to another person or location. Registration is effective for one year and can be renewed following a physical inspection of the facility.

(A) General

(1) No person shall sell or offer or expose milk for sale produced on a dairy farm for use or disposal elsewhere than on such farm, unless as to such farm a Certificate of Registration has been issued by the Commissioner.

(2) Only a person who complies with the requirements of 330 CMR 27.00 shall be entitled to receive and retain a certificate.

(3) The certificate shall be posted in the milkroom.

(4) A certificate shall not be transferable from a person or a place.

(B) Application for Certificate

(1) Any person desiring to operate a dairy farm shall make written application for a certificate on a form provided by the Department in accordance with M.G.L. c. 94, § 16(B).

(C) Expiration and Renewal of Certificate

- (1) A certificate shall expire no later than one year from the date issued.
- (2) A certificate may be renewed by applying at least 30 days prior to the expiration of the certificate. An application for a renewal certificate shall be made in writing on a form provided by the Department.

(D) Conditions for Issuance

- (1) After completion of an application for an original certificate or renewal certificate the Department shall cause an inspection of the dairy farm to take place. This inspection may be conducted by the Bureau. When the inspection reveals that the applicable requirements of 330 CMR 27.00 have been met, a certificate shall be issued to the applicant by the Department: provided that the applicant is found to be responsible and suitable for certification in accordance with 330 CMR 27.011(D)(2).
- (2) After completion of an application for an original certificate or a renewal certificate, the Department shall make a finding concerning the responsibility and suitability of the applicant for certification. Factors which have a significant bearing on such finding include but are not limited to the following:
 - (a) The applicant's history of prior compliance with 330 CMR 27.00.
 - (b) The applicant's ability and willingness to take corrective action when notified by the Department of violations of 330 CMR 27.00.

(E) Notification of Changes. Change in ownership, name or location A certificatee shall notify the Department and the Bureau within five business days after any change in ownership, and at least 30 days prior to any change of the name or location of the dairy farm, and shall promptly submit an application for a new or amended certificate, along with written documentation reflecting such change.

27.12: Inspections

SUMMARY

MDAR inspections of dairy farms are conducted monthly, and without notice. Access to the entire facility must be granted. A written inspection, with violations noted, will be completed by the inspector and provided to the farm at the end of the inspection. If violations are found, a second inspection will be carried out after sufficient time to remedy the violation(s). Violation of the same issue upon the second inspection may result in suspension of the farm's certificate and a halt to sales.

(A) General

- (1) The department shall cause an inspection to be made of every dairy farm within the commonwealth at least once every six months, and may cause the inspection of dairy farms operating outside the commonwealth once every six months, and as often as necessary for the enforcement of 330 CMR 27.00. These inspections may be conducted by the Bureau.
- (2) Agents of the Department, may enter all parts of any dairy farm at any reasonable time for the purpose of making an inspection to ascertain whether the farm is in compliance with 330 CMR 27.00. No prior notice of inspection is required. They may examine the records of the farm to obtain information pertaining to the number of dairy cows over two years of age, the number of dairy cows currently milking, the number of heifers less than two years of age, the production of milk per day, and a determination of where the milk is being shipped.

- (3) If the certificatee or person in charge at the time of the inspection refuses entry to an agent of the Department, or refuses to permit an authorized inspection, the Commissioner or her/his agent may immediately suspend the certificate of the dairy farm, without prior notice or hearing, in accordance with 330 CMR 27.016(A).
- (4) If the certificatee or any of her/his employees interferes with the Department in the performance of its duties, the Department may take steps to suspend or revoke the certification of the dairy farm in accordance with 330 CMR 27.016(B), (C), and (D).
- (5) The Department may accept inspections by out-of-state regulatory authorities, for renewal purposes, for producers shipping milk into the commonwealth from out-of-state locations for compliance with 330 CMR 27.00.
- (6) Violations of 330 CMR 27.07 and 27.08 shall be recorded on appropriate ledgers for evaluation of compliance with 330 CMR 27.012(C)(4). A computer or other information retrieval system may be used.

(B) Inspection Report

- (1) Whenever an inspection of a dairy farm is made, the findings shall be recorded on an inspection report. The inspection report shall serve as an order to the producer to correct all violations of 330 CMR 27.00 noted thereon by the date indicated on the report by the inspector.
- (2) The inspection report shall include, but need not be limited to, the following information:
 - (a) The name of the inspector;
 - (b) The date and time of the inspection;
 - (c) The name and location of the dairy farm inspected;
 - (d) A listing of the specific provisions of 330 CMR 27.00 that have been violated;
 - (e) A determination by the inspector whether any of the violations create an imminent health hazard;
 - (f) A space for the signature of the person in charge of the dairy farm at the time of the inspection.

(C) Conduct of Inspections

- (1) The inspections performed pursuant to 330 CMR 27.011(D) and 330 CMR 27.012(A)(1) shall be full inspections.
- (2) A copy of the completed inspection report form shall be furnished to the person in charge of the Dairy farm at the conclusion of the inspection, posted on an inside wall of the milk-room, or left in some other conspicuous place. This inspection report shall not be defaced and shall be made available to the Department upon request. An identical copy of the inspection report shall be filed with the records of the Department and retained for at least three years.
- (3) Inspections shall be made of dairy farms at different times of the day in order to ascertain if the processes of equipment assembly, sanitizing, cleaning and other procedures comply with the requirements of 330 CMR 27.00.
- (4) Should the violation of any significant requirement set forth in 330 CMR 27.05, 330 CMR 27.06, 330 CMR 27.07 or 330 CMR 27.08 be found to exist during an inspection of a dairy farm, a second inspection shall be required after a time deemed necessary by the Department to remedy the violation, but not before three days. Any violation of the same requirement on such second inspection may result in the immediate suspension of the certificate, without a prior hearing, in accordance with 330 CMR 27.016(A), and may also result in court action.

27.13: Examination of Milk

SUMMARY

A milk sample will be taken at each monthly inspection and sent to a state-approved testing facility. Results must meet the thresholds established in section 27.06 (above). If those levels are exceeded, the farm will be notified and further inspections may be conducted to determine and remedy the cause.

Milk may be examined or sampled by the Department.

(A) Sampling

- (1) During any consecutive six month period, at least one sample per month shall be taken of raw milk for pasteurization, ultra-pasteurization, or aseptic processing and raw for retail sale at the dairy farm.
- (2) All samples of milk for pasteurization, ultrapasteurization or aseptic processing shall be collected and delivered to a milk plant, receiving station, or other location approved by the regulatory agency.
- (3) Samples of raw milk for retail sale shall be taken while in the possession of the farm or at any time prior to delivery to the plant or consumer.

(B) Testing

- (1) Required bacterial counts, DMSCC, drug, and cooling temperature checks shall be performed on raw milk.
- (2) Samples shall be analyzed at an official laboratory or officially designated laboratory. The results of all tests on milk and milk products shall be forwarded to the Department.
- (3) All sampling procedures and required laboratory examinations shall be in substantial compliance with the latest edition of Standard Methods for the Examination of Dairy Products of the American Public Health Association, or any successor document, and the latest edition of Official Methods of Analysis of the Association of Official Analytical Chemists, or any successor document.
- (4) Such procedures, including the certification of sample collectors, and examinations shall be evaluated in accordance with the Evaluation of Milk Laboratories, the most recent edition of the Recommendations of the United States Public Health Service/ Food and Drug Administration, or any successor document.
- (5) Examinations and tests to detect adulterants, including pesticides, shall be conducted as the Department requires.

(C) Procedures

- (1) Violations of bacteria, confirmed somatic cell counts, adulterants, pesticides, and cooling temperature standards shall be followed promptly by inspection to determine and correct the cause.

(D) Laboratory Techniques

- (1) Procedures for the collection and holding of samples; the selection and preparation of apparatus, media and reagents; and the analytical procedures, incubation, reading, and reporting of results, shall be in substantial compliance with Standard Methods for the Examination of Dairy Products and the Official Methods of Analysis, Association of Official Analytical Chemist (AOAC). The procedures shall be those specified therein for:
 - (a) Standard plate count at 32°C.

- (b) Simplified methods for viable counts of raw milk at 32°C.
- (c) Alternate methods for viable counts for raw milk and the petrifilm method for raw milk;
- (d) Coliform test with solid media at 32°C for all milk and milk products;
- (2) Disc assay methods for antibiotics shall be as specified in the U.S. Grade "A" Pasteurized Milk Ordinance.
- (3) Screening and confirmatory methods for the detection of abnormal milk.
- (4) Any other tests may be required which have been approved by the U.S. Food and Drug Administration and the Commissioner to be equally accurate, precise, and practical.
- (5) Any one of the following three tests may be used for screening raw milk samples to indicate a range of somatic cell levels: California Mastitis Test, Modified Whitside Test, or Wisconsin Mastitis Test.
- (6) One of the following confirmatory tests shall be used: Direct Microscopic Somatic Cell Counting, Electronic Somatic Cell Counting, Optical Somatic Cell Counting for Membrane Filter DNA Somatic Cell Count, or any other standard procedure previously approved, in writing, by the Department.
- (7) Laboratories using acceptable screening tests shall confirm that sample of herd milk which exceeds any of the following screening test results:
 - (a) California Mastitis Test--1
 - (b) Modified Whitside Test--1+
 - (c) Wisconsin Mastitis Test--18 mm

The results of the screening test, or confirmatory test, shall be recorded on the official records of the dairy farm and a copy of the results sent to the milk producer.

- (8) When a warning letter has been sent because of excessively high somatic cell counts, an official inspection of the dairy shall be made by regulatory personnel. This inspection shall be made during milking time.
- (9) When bacterial counts and temperature determinations are made of several samples of the same milk collected from the same supply on the same day these values are averaged arithmetically, and the results recorded as the count for that day.
- (10) A computer or other information retrieval system may be used.

(E) Disease Transmission

- (1) When samples of raw milk are taken, they shall be drawn following adequate agitation.
- (2) Raw milk must be produced under clean, sanitary conditions to limit the possibility of any disease transmission via raw milk.
- (3) Raw milk is known to transmit disease, including (but not limited to):
 - (a) Listeriosis;
 - (b) Yersiniosis;
 - (c) Campylobacteriosis;
 - (d) Salmonellosis;
 - (e) Brucellosis;
 - (f) Q-fever;
 - (g) Tuberculosis; and
 - (h) Any other disease so designated by the Department.

27.14: Enforcement Standards

SUMMARY

If the thresholds stated in section 27.06 (above) are exceeded twice in four consecutive inspections, the farm will be notified by mail and an inspection will be conducted within three weeks of the notice. If those standards are exceeded three times in five consecutive inspections, MDAR will suspend the farm's certificate and sales must be halted.

(A) Enforcement

- (1) Whenever two of the last four consecutive bacterial counts, somatic cell counts, or cooling temperature checks, taken on separate days, exceed the limit of the standard for the milk and/or milk products, the Department shall send by first class mail a written notice thereof to the certificatee. This notice shall also inform the certificatee of the provisions of 330 CMR 27.14(A)(2), and shall remain in effect as long as two of the last four consecutive samples exceed the limit of the standard. An additional sample shall be taken within 21 days of the sending of such notice, but not before the lapse of three days.
- (2) Whenever the standard is violated by three of the last five bacterial counts, somatic cell counts, or cooling temperature checks, the Department shall immediately suspend the certificate in accordance with 330 CMR 27.16(A).
- (3) The department may accept determinations of 330 CMR 27.14 by out-of-state regulatory authorities for producers shipping milk into the Commonwealth from out-of-state locations.
- (4) When the somatic cell count of a re-check sample of the producer's milk is above 1,000,000 cells per ml., the producer shall be sent written notification. It shall be suggested in the notification that all in-state producers enroll in the Massachusetts Mastitis Control Program.
- (5) Whenever a drug or pesticide residue test is positive, an investigation shall be made to determine the cause, and the cause shall be corrected. An additional sample shall be taken and tested for drug or pesticide residues, and no milk shall be offered for sale, nor shall any milk be received from a contaminated source until it is shown by a subsequent sample to be free of drug or pesticide residues or below the action levels established for such residues.

27.15: Hearings

SUMMARY

Farmers may request a hearing to address issues raised in inspections or tests.

- (A) The person or persons to whom any order issued pursuant to 330 CMR 27.016(A) or (B) has been directed may request a hearing before the bureau.
- (B) A request for a hearing may be made by the certificatee to the bureau in writing or by telephone to a person authorized to schedule a hearing.
- (C) Upon receipt of a request for a hearing, the bureau shall set a time and a place for such hearing and shall inform the petitioner thereof. Hearings may be requested for violations of 330 CMR 27.14 or 330 CMR 27.16(A) or (B) and shall normally be held within 72 hours of the request. However, upon application of the petitioner, the bureau may postpone the date of the

hearing for a reasonable time if in the judgment of the bureau the petitioner has submitted a good and sufficient reason for such postponement.

(D) At the hearing the petitioner shall be given an opportunity to be heard and to show why the order should be modified or withdrawn. Any oral testimony given at a hearing may be recorded verbatim.

(E) After the hearing, the bureau shall make a final decision based upon the complete hearing record, and shall inform the petitioner in writing of the decision. If the bureau sustains or modifies an order, it shall be carried out within the time period allotted in the original order or in the modification.

(F) Every notice, order, decision and other record prepared by the bureau in connection with the hearing shall be entered as a matter of public record in the office of the bureau.

(G) Any person aggrieved by the final decision of the bureau may seek relief in a court of competent jurisdiction in the Commonwealth.

27.16: Certificate: Suspension or Revocation

SUMMARY

If MDAR determines that a farm poses an imminent health hazard, it may suspend the farm's certificate and halt sales immediately. Serious or repeated violations may result in permanent revocation of a farm's certificate. This section details the processes for hearings and suspensions of certificates.

(A) Suspension without a Prior Hearing

- (1) The commissioner or her/his agent may, without prior notice or hearing, immediately suspend a certificate to operate a dairy farm if an imminent health hazard is found to exist.
- (2) The commissioner or her/his agent may, without granting a prior hearing, immediately suspend a certificate if:
 - (a) A second violation of the same requirement of 330 CMR 27.05, 330 CMR 27.06, 330 CMR 27.07, or 330 CMR 27.08 is found to exist on a second inspection, in accordance with 330 CMR 27.12(C)(4); or
 - (b) A violation as specified in 330 CMR 27.14(A)(2) is found to exist.
- (3) The commissioner or her/his agent may, without prior notice or hearing, immediately suspend a certificate to operate a dairy farm if an agent of the Department is refused entry to the farm or is prevented from conducting an authorized inspection, as specified in 330 CMR 27.12.
- (4) Whenever a suspension is ordered pursuant to 330 CMR 27.16(A)(1), (2), or (3), the order shall state:
 - (a) The reason(s) for the immediate suspension;
 - (b) The violation(s) leading to the determination that an imminent health hazard exists, if applicable; and
 - (c) That a hearing will be held if a request for a hearing is made to the bureau, in writing or by telephone to a person authorized to schedule a hearing, by the certificatee.
- (5) The order recommending immediate suspension of the certificate shall be effective upon determination at the premises by an authorized agent of the Department. If the certificatee is not present at the time of such posting, a copy of the order of suspension shall be served in accordance with 330 CMR 27.17(C).

(6) The bureau shall hold a hearing after a request for a hearing has been made to the bureau, in writing or by telephone to a person authorized to schedule a hearing, by the certificatee.

(7) Whether or not a hearing is requested, the Department may end the suspension at any time if reasons for the suspension no longer exist.

(B) Ten Day Letter Process

(1) The Department may take steps to exclude milk from the markets of the Commonwealth of Massachusetts and may suspend the producer's Certificate of Registration if the milk has been produced on a dairy farm where serious sanitary code violations are found to exist.

(2) If a serious sanitary code violation is found to exist during an inspection, the Bureau may issue a notice to provide for an additional inspection at least ten days after the date of the receipt of such notice. Such notice may be given during either an initial or subsequent inspection.

(3) The notice shall specify the violation(s) for which the dairy farm is under question, and that the certificate may be suspended.

(4) To obtain a hearing after the subsequent reinspection, the certificatee shall make a request for a hearing to the bureau, in writing or by telephone to a person authorized to schedule a hearing, within five days of the reinspection following notice. If no request for a hearing is made within the five day period, the revocation or suspension shall be imposed at the end of the time period specified in the order; six days after the reinspection.

(C) Suspension after a Hearing

(1) The Department may, after providing opportunity for hearing, suspend a certificate to operate a dairy farm if the farm does not comply with any one or more of the requirements of 330 CMR 27.00.

(2) The order shall be in writing and sent to the certificatee or her/his authorized agent in accordance with 330 CMR 27.17(C).

(3) The order shall specify the specific violations for which the certificate is to be suspended and that the certificate shall be suspended by the Department following notice of such order.

(D) Permanent Revocation of Certificate

(1) The Department may, after providing opportunity for a hearing, order the revocation of a certificate for any one of the following:

- (a) Serious or repeated violations of any of the requirements of 330 CMR 27.00;
- (b) Interference with the Department in the performance of its duty;
- (c) A criminal conviction of the certificatee relating to the operation of the dairy farm;
- (d) Keeping or submitting any misleading or false records or documents required by 330 CMR 27.00.

(2) The inspection shall be in writing and shall be served on the certificatee or her/his authorized agent in accordance with 330 CMR 27.17(C).

27.17: Orders for Suspension or Revocation**SUMMARY**

Farms will be notified of suspensions or revocations of certificates by a written order, which will include an explanation of the reason for the suspension or revocation.

- (A) If, pursuant to 330 CMR 27.16, the Department orders the suspension or revocation of a dairy farm certificate, the certificatee shall be so notified by a written order.
- (B) The order shall include, but need not be limited to, the following:
- (1) The name and location of the dairy farm;
 - (2) The reasons for the suspension or revocation, and a description of such operation;
 - (3) The date the suspension or revocation is or will become effective;
- (C) Orders for suspension or revocation shall be served on the certificatee or her/his authorized agent as follows:
- (1) By sending him a copy of the order by registered or certified mail, return receipt requested; or
 - (2) Personally, by any person authorized by the department to serve; or
- If the aforementioned methods of service are unsuccessful, service may be made by any person authorized to serve civil process as follows:
- (1) By leaving a copy of the order at her/his last and usual place of abode; or
 - (2) By posting a copy of the notice in a conspicuous place on or about the farm premises if her/his last and usual place of abode is unknown.

27.18: Certificate: Reinstatement after Suspension**SUMMARY**

Certificates suspended due to violation(s) of milk test standards can be reinstated following a subsequent satisfactory test and an inspection to determine that the conditions responsible for the violation have been corrected. Certificates suspended due to violation(s) of other regulations can be reinstated following a physical inspection.

- (A) Any certificatee whose certificate has been suspended may make written application to the department for the reinstatement of her/his certificate.
- (B) When the certificate suspension has been due to a violation of any of the bacterial, DM-SCC and anti-biotic, or cooling temperature standards, the department shall, after notification by a producer-applicant, or after laboratory results have been received, reinstate the certificate after determining by an inspection of the facilities and operating methods that the conditions responsible for the violations have been corrected. This inspection may be conducted by the bureau.
- (C) Whenever the certificate suspension has been due to violation of a requirement other than bacteriological, DMSCC and antibiotic or cooling temperature standards, the application shall indicate that the violation(s) has been corrected. Within one week of the receipt of such application, the department shall cause an inspection of the applicant's establishment to take

place, and as many additional inspections thereafter as are deemed necessary, to determine that the applicant's establishment is in compliance with 330 CMR 27.07 and/or 330 CMR 27.08. These inspections may be conducted by the bureau. When the findings justify, the department shall reinstate the certificate.

27.19: Grade A Fluid Milk from Outside the Commonwealth

SUMMARY

This section applies exclusively to milk being shipped off-farm for processing, not unpasteurized milk to be sold to consumers. It is included here as reference.

(A) Fluid milk from a dairy farm outside the Commonwealth may be sold or served within the Commonwealth if such dairy farm has received a Certificate of Registration from the Massachusetts Department of Food and Agriculture pursuant to M.G.L. c. 94.

(1) Upon arrival at the plant, commingled milk for pasteurization shall comply with the bacteriological, chemical and temperature standards of 330 CMR 27.05.

(2) Raw and pasteurized milk received from sources outside the Commonwealth shall be sampled as the Department requires.

(3) Grade A fluid milk shall be produced under regulations substantially equivalent to those of 330 CMR 27.00.

(4) Grade A fluid milk shall be under routine official supervision.

(5) Grade A fluid milk must have been awarded, by a State Milk Sanitation Rating Officer certified by the U.S. Food and Drug Administration, a milk sanitation compliance rating of 90% or higher and an enforcement rating of 90% or higher. Milk not meeting these requirements shall be prohibited from entering the Massachusetts market.

(6) All ratings are made on the basis of procedures outlined in the latest revision of Methods of Making Sanitation Ratings of Milk Supplies and the most recent edition of the Recommendations of the United States Public Health Service/Food and Drug Administration, or any successor document.

27.20: Severability

If any provision of 330 CMR 27.00 shall be declared invalid for any reason whatsoever, that decision shall not affect any other portion of 330 CMR 27.00, which shall remain in full force and effect; and to this end the provisions of 330 CMR 27.00 are hereby declared severable.

27.21: Adoption of the Appendixes to the Grade “A” Pasteurized Milk Ordinance (PMO)**SUMMARY**

The Grade “A” Pasteurized Milk Ordinance (PMO) sets the FDA's standards for all milk production, handling and sales in the U.S. It is available online at <http://1.usa.gov/wNdWr>. States may choose to adopt the PMO in its entirety, write their own regulations, or adopt certain sections of the PMO. In this section, MDAR specifically does not adopt certain appendices.

The Department hereby adopts and incorporates by reference the Appendixes to the Grade “A” Pasteurized Milk Ordinance (PMO) as promulgated and as amended by the United States Department of Health and Human Services as they relate to farms and milk producers, except for those provisions specifically omitted by 330 CMR 27.21 The following Appendixes to the PMO are not adopted: A, E, H, I, J and L.

REGULATORY AUTHORITY

330 CMR 27.00: M.G.L. c. 94, § 13.

SUMMARY

This cites the section of Massachusetts General Law (reprinted below) that grants MDAR the authority to impose and enforce these regulations.

M.G.L. c. 94, § 13.**Rules for milk and raw milk products**

The commissioner shall, subject to the provisions of chapter thirty A, adopt and promulgate rules and regulations governing the production, transportation, receiving, handling, storage, processing, distribution and sale of raw milk for pasteurization and raw products thereof being shipped or offered for shipment into or within the commonwealth, including all pertinent sanitary standards and uniform minimum requirements for the inspection of dairy farms, milk plants and receiving stations, wherever located, and pasteurization plants located outside the commonwealth, and may, in like manner and from time to time, amend, modify or repeal the same. Such rules and regulations shall be consistent with applicable provisions of the Grade “A” Pasteurized Milk Ordinance and related publications of the Food and Drug Administration, Public Health Service, United States Department of Health, Education and Welfare, or any successor agency with like regulatory powers; provided, that requirement by the commissioner of more stringent bacterial and temperature standards shall not be precluded. Any person who violates any rule or regulation duly adopted and promulgated pursuant to this section shall be subject to a fine of not less than twenty-five nor more than one hundred dollars for each offence.

Other sections of Massachusetts General Law (M.G.L.) pertaining to raw milk dairies

M.G.L. c. 94, § 12

Milk and cream, definitions, standards; rules

The term “milk” shall mean the lacteal secretion, practically free from colostrum, obtained by the complete milking of one or more healthy cows or goats. The legal minimum standard for cow milk in final package form for beverage use shall be milk which is shown to contain not less than eight and one-quarter per cent milk solids not fat and three and one-quarter per cent milkfat. The legal minimum standard for goat milk in final package form for beverage use shall be milk which is shown to contain not less than seven point five per cent milk solids not fat and not less than two point five per cent milkfat. Milk may be adjusted by separating part of the milkfat therefrom or by adding cream thereto.

The term “cream” shall mean the liquid milk product high in fat separated from milk. The Massachusetts legal minimum standard for cream shall be cream which, upon analysis, is shown to contain not less than eighteen per cent milkfat. Cream may be adjusted by adding thereto milk, skim milk and such other milk products as the commissioner of public health may authorize by rule or regulation as hereinafter provided.

The commissioner of public health shall, subject to the provisions of chapter thirty A, adopt and promulgate rules and regulations establishing other legal standards as well as labeling requirements and sanitary standards for milk, cream and products thereof, including foods containing such ingredients, as sold or offered for sale in final package form, and may, in like manner and from time to time, amend, modify or repeal the same. Such rules and regulations shall be consistent with all applicable regulations effective from time to time pursuant to issuance by the Food and Drug Administration, Public Health Service, United States Department of Health, Education and Welfare, or any successor agency with like regulatory powers; provided, that requirement by said commissioner of more stringent bacterial and temperature standards shall not be precluded; and provided, further, that said commissioner may modify the application of said federal regulations to such degree as he may determine to be appropriate where only intrastate commerce in such products is involved. No product standard which has been established hereunder shall be subject separately to the provisions of section one hundred and ninety-two. Any person who violates any rule or regulation duly adopted and promulgated by said commissioner pursuant to this section shall be punished by a fine of not less than twenty-five nor more than one hundred dollars for each offence.

M.G.L. c. 94, § 13E**Bacterial standards; milk and cream sales and deliveries****SUMMARY**

Towns are permitted to set testing standards for milk that are more stringent than those set by MDAR. In doing so they can effectively ban the sale of raw milk from farms within the town, by setting those standards to zero.

Boards of health of cities and towns may adopt bacterial standards for milk which are numerically less but not greater than such standards as may be established therefor under sections twelve and thirteen. Rules and regulations promulgated under said sections shall not be construed to prevent the exercise by such boards of the powers and duties conferred and imposed upon them by section forty-one nor to prevent the sale of milk the production of which is regulated under authority of sections twenty to twenty-five, inclusive, of chapter one hundred and eighty. This section shall not be deemed to authorize the sale or delivery of milk, cream or products thereof which are not in compliance with applicable rules and regulations established pursuant to said sections twelve and thirteen.

M.G.L. c. 94, § 16B.**Applications for registration of dairy farms****SUMMARY**

All dairy farms in Massachusetts that provide milk to the public must register with the state.

Applications for the registration of dairy farms under section sixteen C shall be made upon blanks furnished by the commissioner and shall contain, in addition to such other information as may be required by the commissioner, a statement of the name, place of residence and business address of the applicant, the amount of milk produced on his dairy farm during the calendar month last preceding the date of application, the number of dairy cows more than two years of age and the number of heifers less than two years of age kept on said dairy farm during said month, the names and business addresses of dealers, distributors and wholesale purchasers who receive milk from said dairy farm, together with a statement of the estimated amount of milk to be supplied each dealer, distributor and wholesale purchaser during such period as may be designated by the commissioner. Every statement shall be verified by oath or written declaration that it is made under the penalties of perjury.

The Commonwealth of Massachusetts

1st Insp'n _____ Reinsp'n _____ Sold to Plant No. _____ Location _____	DEPARTMENT OF AGRICULTURAL RESOURCES 251 CAUSEWAY STREET, BOSTON, MA 02114-2151 APPLICATION FOR DAIRY FARM REGISTRATION AND DAIRY FARM INSPECTION REPORT PLEASE POST IN MILKROOM	Date _____ Time _____ Registration No. _____ Hauler _____
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Owner/Producer _____ Farm name _____

Physical address _____ Town _____

Mailing address (if different) _____ Town _____, MA _____ Zip _____

No. cows and bred heifers _____ No. cows milking _____ No. of unbred heifers _____ Pounds of milk sold daily _____

I hereby apply for registration of a dairy farm and declare the above information to be true, under the penalties of perjury.

Signature of Owner/Producer _____

Inspection of your farm today shows violations existing in the items checked below. You are further notified that this inspection sheet serves as notification of the intent to suspend your permit if the violations noted are not in compliance at the time of the next inspection. (see Sections 3 and 5 of the Grade "A" Pasteurized Milk Ordinance.)

<p>COWS, GOATS OR SHEEP</p> <p>1. Abnormal Milk (5) Cows secreting abnormal milk milked last or in separate equipment _____ (a) _____ Abnormal milk properly handled and disposed of _____ (b) _____ Proper care of abnormal milk handling equipment _____ (c) _____</p> <p style="text-align: center;">MILKING BARN, STABLE, OR PARLOR</p> <p>2. Construction: Floors, gutters, and feed troughs of concrete or equally impervious materials; in good repair (1) _____ (a) _____ Walls and ceilings smooth, painted or finished adequately in good repair; ceiling dust-tight (1) _____ (b) _____ Separate stalls or pens for horses, calves, and bulls, no overcrowding (1) _____ (c) _____ Adequate natural and/or artificial light; well distributed (1) _____ (d) _____ Properly ventilated (1) _____ (e) _____</p> <p>3. Cleanliness: (3) Clean and free of litter _____ (a) _____ No swine or fowl _____ (b) _____</p> <p>4. Cowyard: (3) Graded to drain; no pooled water or wastes _____ (a) _____ Cowyard clean; cattle housing areas & manure packs properly maintained _____ (b) _____ No swine _____ (c) _____ Manure stored inaccessible to cows _____ (d) _____</p> <p style="text-align: center;">MILKHOUSE OR ROOM</p> <p>5. Construction and Facilities:</p> <p>A. Floors (1) Smooth concrete or other impervious material; in good repair _____ (a) _____ Graded to drain _____ (b) _____ Drains trapped, if connected to sanitary system _____ (c) _____</p> <p>B. Walls and Ceilings: (1) Approved material and finish _____ (a) _____ Good repair (windows, doors, and hose port included) _____ (b) _____</p> <p>C. Lighting and Ventilation: (2) Adequate natural and/or artificial light; properly distributed _____ (a) _____ Adequate ventilation _____ (b) _____ Doors and windows closed during dusty weather _____ (c) _____ Vents and lighting fixtures properly installed _____ (d) _____</p> <p>D. Miscellaneous Requirements: (2) Used for milkhouse operations only; sufficient size _____ (a) _____ No direct opening into living quarters or barn, except as permitted by Ordinance _____ (b) _____ Liquid wastes properly disposed of _____ (c) _____ Proper hose port where required _____ (d) _____ Acceptable surface under hose port _____ (e) _____ Suitable shelter for transport truck as required by this Ordinance _____ (f) _____</p>	<p>E. Cleaning Facilities: (2) Two-compartment wash and rinse vat of adequate size _____ (a) _____ Suitable water heating facilities _____ (b) _____ Water under pressure piped to milkhouse _____ (c) _____</p> <p>6. Cleanliness: (4) Floors, walls, windows, tables, and similar non-product contact surfaces clean _____ (a) _____ No trash, unnecessary articles, animals or fowl _____ (b) _____</p> <p style="text-align: center;">TOILET AND WATER SUPPLY</p> <p>7. Toilet: (4) Provided; conveniently located _____ (a) _____ Constructed and operated according to Ordinance _____ (b) _____ No evidence of human wastes about premises _____ (c) _____ Toilet room in compliance with Ordinance _____ (d) _____</p> <p>8. Water Supply: (2 or 5) Type _____ Tested _____ Constructed and operated according to Ordinance _____ (a) _____ Complies with bacteriological standards _____ (b) _____ No connection between safe and unsafe supplies; no improper submerged inlets _____ (c) _____</p> <p style="text-align: center;">UTENSILS AND EQUIPMENT</p> <p>9. Construction: (4) Smooth, impervious, nonabsorbent, safe materials; easily cleanable; seamless hooded pails _____ (a) _____ In good repair, accessible for inspection _____ (b) _____ Approved single-service articles; not reused _____ (c) _____ Utensils and equipment of proper design _____ (d) _____ Approved CIP milk pipeline system _____ (e) _____</p> <p>10. Cleaning: (5) Utensils and equipment clean _____ (a) _____</p> <p>11. Sanitization: (5) product used _____ All multi-use containers and equipment subjected to approved sanitization process (See Ordinance) _____ (a) _____</p> <p>12. Storage: (2) All multi-use containers and equipment properly stored _____ (a) _____ Stored to assure complete drainage, where applicable _____ (b) _____ Single-service articles properly stored _____ (c) _____</p> <p style="text-align: center;">MILKING</p> <p style="text-align: center;">MTI date: _____</p> <p>13. Flanks, Udders, and Teats: (5) Milking done in barn, stable, or parlor _____ (a) _____ Brushing completed before milking begun _____ (b) _____ Flanks, bellies, udders, and tails of cows clean at time of milking; clipped when required _____ (c) _____ Teats treated with sanitizing solution and dried, just prior to milking _____ (d) _____ No wet hand milking _____ (e) _____</p>	<p style="text-align: center;">TRANSFER AND PROTECTION OF MILK</p> <p>14. Protection from Contamination: (3) No overcrowding (in milk room) _____ (a) _____ Product and CIP circuits separated _____ (b) _____ Improperly handled milk discarded _____ (c) _____ Immediate removal of milk _____ (d) _____ Milk and equipment properly protected _____ (e) _____ Sanitized milk surfaces not exposed to contamination _____ (f) _____ Air under pressure of proper quality _____ (g) _____</p> <p>15. Drug and Chemical Control: (2-7-5) Cleaners and sanitizers properly identified (2) _____ (a) _____ Drug administration equipment properly handled and stored (2) _____ (b) _____ Drugs properly labeled (name and address) and stored (2) _____ (c) _____ Drugs properly labeled (directions for use, cautionary statements, active ingredient (5) _____ (d) _____ Drugs properly used and stored to preclude contamination of milk (5) _____ (e) _____</p> <p style="text-align: center;">PERSONNEL</p> <p>16. Hand-Washing Facilities: (2) Proper hand-washing facilities convenient to milking operations _____ (a) _____ Wash and rinse vats not used as hand washing facilities _____ (b) _____</p> <p>17. Personnel Cleanliness: (1) Hands washed clean and dried before milking, or performing milk house functions; rewashed when contaminated _____ (a) _____ Clean outer garments worn _____ (b) _____</p> <p style="text-align: center;">COOLING</p> <p>18. Cooling: (5) _____ °F Milk Tank Vol. _____ Make _____ °F Milk cooled 40° F or less within 2 hours after milking, except as permitted by Ordinance _____ (a) _____ Recirculated cooling water, safe source, protected and; meets bacteriological standards _____ (b) _____ An acceptable recording device shall be installed and maintained when required _____ (c) _____</p> <p style="text-align: center;">PEST CONTROL</p> <p>19. Insect and Rodent Control: Fly breeding minimized by approved manure disposal methods (See Ordinance) _____ (3) _____ (a) _____ Manure packs properly maintained _____ (b) _____ All milkhouse openings effectively screened or otherwise protected; doors tight and self-closing; screen doors open outward _____ (2) _____ (c) _____ Milkhouse free of insects and rodents _____ (d) _____ Approved pesticides used properly _____ (e) _____ Equipment and utensils not exposed to pesticide contamination _____ (2) _____ (f) _____ Surroundings neat and clean; free of harborages and breeding areas _____ (g) _____ Feed storage not an attraction for birds, rodents or insects _____ (2) _____ (h) _____</p>
<p>REMARKS</p>	<p style="text-align: right;">LAST 3 BACTERIA COUNTS</p>	

APPROVED
 NOT APPROVED
 REINSPECT
 EXCLUDE
 REINSTATE - INSPECTOR _____

