

Starting up a Dairy in New Hampshire

(rev. April 2023)

Contact information:

Dairy Sanitation Program:
29 Hazen Drive, Concord, NH 03301
(603) 271-4673.

<https://www.dhhs.nh.gov/programs-services/environmental-health-and-you/food-protection/dairy-farms-and-dairy-plants>

Regulation:

The production and processing of milk and milk products in New Hampshire is regulated by the Department of Health and Human Services, Food Protection Section, Dairy Sanitation Program.

State Law: RSA 184.

Administrative Rules: He-P 2700 Milk Producers, Milk Plants, Producer/Distributors, and Distributors - rules for permitting of farms and licensing milk plants and producer/distributors.

Mil 300 Milk Sanitation - this rule adopts the federal Pasteurized Milk Ordinance (PMO).

The PMO is available on line at <https://www.fda.gov/media/140394/download>

Milk and milk products include: fluid milk, cultured fluid milk, cream, yogurt, raw milk yogurt, frozen yogurt, sour cream, eggnog, butter, ice cream, gelato and cheese.

Products made from milk or cream, such as puddings, candies, etc. are not regulated by the Dairy Sanitation Program, but may still require a license as a food processor, food retailer or homestead food operation. More information is available at <https://www.dhhs.nh.gov/programs-services/environmental-health-and-you/food-protection> or 603-271-4589.

Permits and Licenses:

All facilities, which process or pasteurize milk or milk products, must have a Milk Sanitation License, except as exempted below. This license renews annually. All licenses expire on January 1 after the year of issuance.

The milking operation receives a Milk Producer Permit if the milk is going to be processed at a licensed facility. This permit is issued once and is valid until 6 months after milk operations have ceased on the farm or unless the permit is revoked for some reason.

According to RSA 184:79, a milk producer who is also a distributor and who sells more than an average of 80 quarts (20 gallons) of milk a day is classified as a producer/distributor. A producer/distributor must have a Milk Sanitation License.

Exemptions from Licensing:

No license or permit is required:

- If less than an average of 80 quarts (20 gallons) of raw milk is sold per day; and
- The milk is only sold directly from the producer to the consumer from the producer's own farm, farm stand or at a farmer's market and if the milk is not sold to or used by a licensed milk plant

RSA 184:84 V also exempts milk producer-distributors who process less than 20 gallons of raw milk per day into raw milk cheese aged at least 60 days, cream, yogurt, butter, ice cream, frozen yogurt or kefir from licensing. These products are only allowable offered directly to the consumer from their own farm or farm stand or at a farmer's market within the State of New Hampshire.

Producer-distributors who qualify for this exemption are required to clearly label their product with the name of the product, their farm name, address and phone number and the following statement: "This product is made with raw milk and is exempt from New Hampshire licensing and inspection. RAW MILK: consuming raw milk may increase your risk of foodborne illness."

Ice cream and frozen yogurt produced and sold under this exemption shall be packaged in containers no larger than 6 fluid ounces and shall be marked with an expiration date 30 days from the date of manufacture.

Sale of Raw Milk to Retail Stores:

RSA 184:30-a allows the direct sale of raw milk or cream from the producer, store or milk pasteurization plant to the final consumer, or milk or cream from a producer to stores.

The Food Protection Section Administrative Rule He-P 2300 requires that all food sold in stores come from an approved source. Therefore, all raw milk sold in stores must come from facility that holds a Milk Sanitation License regardless of the volume of milk sold.

The NH Department of Health and Human Services does not advocate or recommend the consumption of raw milk. Raw milk, improperly pasteurized milk and raw milk fresh cheeses have been implicated in foodborne illness outbreaks of *Salmonella*, *Campylobacter*, *Listeria* and *E. coli* 0157:H7 in recent years. Pathogenic bacteria such as *Brucellosis*, *Campylobacter*, *Salmonella* and *Tuberculosis* can be shed in the milk of apparently healthy animals. *Listeria monocytogenes* is the leading cause of death from a foodborne pathogen.

Sale of Cheese, Yogurt, or other Dairy Products made from Raw or Heat treated Milk:

RSA 184:30-a allows for "the sale, within the state, of cheese made from raw milk when such cheese has been aged a minimum of 60 days at a temperature above 35°F, and is clearly labeled as unpasteurized." This aligns with the language in section 21 of the Code of Federal Regulations part 133, the federal cheese laws.

RSA 184:30-a also states that "This section shall not prohibit the direct sale of yogurt made with raw milk by the producer in this state, provided that such yogurt is clearly labeled as having been made with raw milk." This is contrary to federal requirements for yogurt and applies only to raw milk yogurt made within the state and sold directly to consumers within the state.

Fresh cheeses and all other processed dairy products must be made with pasteurized milk.

New Hampshire has no provisions to allow the use of heat treated milk in making products that will not be aged.

Facility:

Milking Parlor or Barn:

Floors and milking stands, if used, must be impervious, easily cleanable and in good repair. Floors must be graded to drain. Concrete, metal or tile are acceptable materials for floors and milking stands.

Walls and ceilings must be smooth, tight, easily cleanable, light colored and in good repair. Painted wood, plaster, concrete, brick and plastic wallboard are acceptable materials.

Adequate lighting (50 foot candles) and ventilation are also required.

Milk Room:

Floors must be smooth, impervious, graded to drain and in good repair. The milk room drain must have a trap between the milk room and the waste handling facility. This can be below the surface inside or outside of the building. Concrete, metal and tile are acceptable materials.

Walls and ceilings must be smooth, tight, easily cleanable, light colored and in good repair. Painted wood, plaster, concrete, brick, sheet metal, tile and plastic wallboard are acceptable materials.

Adequate lighting (50 foot candles) and ventilation are required.

The milk room cannot open directly into any living quarters. Doors between the milk room and the parlor or barn must be solid, tight, and self closing.

Potable water under pressure must be provided to the milk room. Hot water must also be provided to the milk room.

A 2 bay wash sink and a hand sink must be provided. If the farm is selling raw milk in reusable containers that need to be washed then a 3 bay sink along with the hand sink is required or a commercial dishwasher or bottle washer may be used.

All doors must be tight and self-closing. Outer doors may be screened in warm weather provided the doors open outward. Windows may be opened provided they are screened.

Bulk Milk Tank for Cooling and Storing the Milk:

A bulk tank is not required but it is recommended.

Milk must be cooled down to 45°F or less within 2 hours of the completion of milking and stored at 45°F or less. Improper cooling of milk may cause elevated bacteria counts and decreased shelf life of the milk. If a bulk tank is used, there must be enough milk to reach the agitator after the first milking in order for the milk to cool properly. All bulk tanks manufactured after the year 2000 shall also be equipped with a temperature recording device.

Proper cooling is difficult to achieve in a refrigerator unless the milk is put into small containers. Generally, it works best to pre-cool the milk by placing it in a covered stainless steel or glass container and putting that in an ice water bath. Stirring the milk occasionally helps bring the temperature down

more quickly. Once the milk has cooled, it may be stored in a refrigerator. A thermometer should be used to check the temperature of the milk during cooling to see if the method works or if it needs adjustment.

Separate Rooms Required within Milk Plants:

Separate rooms are needed for the following activities:

1. Pasteurizing, processing, cooling and packaging of milk and milk products;
2. Cleaning of milk cans and containers, bottles and cases; and,
3. Cleaning and sanitizing facilities for milk tank trucks in milk plants receiving milk in such tanks.

Milk Processing Plant:

All milk processing, including pasteurizing and cheese making, must be done in a room separate from the washing of reusable milk containers (glass bottles or milk cans). Raw milk may be stored in the processing room but all milking equipment, buckets and utensils must be washed and stored in the milk room. The processing room may not open directly into the barn or the milking parlor. The processing room may open into the milk room provided there is a solid, self-closing door between the rooms. The processing room should not be located so that it is not subjected to routine traffic in and out of the milk room.

Floors, walls, ceilings, lighting, ventilation, and water requirements are the same as those required for the milk room.

The milk processing room shall be equipped with a 3 bay sink and a hand wash sink.

If pasteurized milk or milk products are bottled and sold in returnable bottles, bottles may be hand washed provided washing, rinsing and sanitizing is done in a 3 bay sink, located in a room separate from the processing room. If greater than 1,000 lbs. of milk are being processed and bottled per day, the plant must be equipped with a proper bottle washer in this separate room.

All milk room and milk plant waste which does not go into a sanitary sewer must go into a system that meets the standards of the USDA Natural Resources Conservation Service (NRCS). A copy of the design shall be provided to the Dairy Sanitation Program. A septic system is generally not recommended for milk room and cheese room waste.

All containers, utensils, and equipment must be made of glass, stainless steel, or other non-toxic and corrosion resistant metals, or durable plastic, rubber or rubber-like materials which cannot be easily scratched or scored and which are non-toxic.

Bottling Pasteurized Milk or Milk Products:

Pasteurized milk or milk products shall be bottled in a sanitary manner by approved mechanical equipment. Capping of these containers shall be done in a sanitary manner, using approved mechanical equipment. Caps may be hand slotted into a capper provided the person handling the caps is wearing a clean pair of gloves.

Raw milk shall not be bottled using the same equipment as pasteurized milk.

Pasteurizers:

The pasteurizer must meet the requirements in the Pasteurized Milk Ordinance.

Stove top or home use type pasteurizers that are currently available are not acceptable.

The simplest pasteurizer available is the vat pasteurizer. Milk is held in the vat at a minimum temperature of 145° for at least 30 minutes. A vat pasteurizer must have:

- Three Thermometers:
 - an indicating thermometer. This is the official thermometer
 - a recording thermometer. This provides the record of legal pasteurization and is checked daily against the indicating thermometer.
 - an air space thermometer. This checks the temperature of the air between the top of the milk and the lid of the pasteurizer. This temperature needs to be at least 150° to ensure that any foam on top of the milk is properly pasteurized.
- An agitator to mix the milk.
- A shoe box type lid with raised edges around any openings in the lid.
- The outlet valve needs to be a leak protector type, which allows any milk leaking past the valve to be diverted to the floor.

Vat pasteurizers work by having very hot water in a jacket surrounding the milk, which in turn heats the milk. Most small vats have built in elements that heat the water in the jacket. Larger vat pasteurizers may require external hot water sources, generally a boiler to produce hot enough water. The Dairy Sanitation Program must approve the type of air space heaters if used.

The other common pasteurizer is the high temperature short time (HTST) which pumps the milk through a plate heat exchanger with hot water on the other side, a holding tube, thermometers and then through a cooling unit after the milk has been pasteurized. Milk is heated to 161°F for at least 15 seconds.

An HTST requires:

- A raw milk balance tank the top of which is below the lowest part of the heat exchanger,
- A positive displacement pump or homogenizer to pump the milk through the unit,
- An indicating thermometer located at the end of the holding tube,
- A recorder/controller with a recording thermometer located in close proximity to the indicating thermometer,
- A diversion valve which automatically diverts milk below pasteurization temperature back to the raw milk balance tank,
- A boiler for heating water to heat the milk,
- A chilled water source for cooling the milk, and
- Access to the beginning and end of the holding tube for measuring the holding time.

Inspections:

Pre-operational:

Inspections or site visits may be conducted at any time prior to licensing. The earlier the Dairy Sanitation Program gets involved the better.

After a facility is permitted or licensed:

Inspections of milking facilities are conducted at least once every 6 months with follow-up if any critical violations are found. Critical violation include:

- Improper milking of treated animals;
- Improperly protected or unsafe water supplies;
- Unclean milking equipment;
- Improper cooling of milk; and
- Improper labeling on extra-label drugs. These are drugs not specifically labeled for the species of animal they are being used on or for the condition they are being used to treat.

Inspections of milk processing facilities are conducted at least once every 3 months with follow-up if any critical violations are found. Critical violations include:

- Improperly protected or unsafe water supplies;
- Unclean equipment;
- Cross connections between raw and pasteurized products;
- Improperly pasteurized products;
- Adulteration of milk;
- Improper cooling of milk.

Pasteurizers are checked every 3 months to make sure they are working properly. For a vat pasteurizer, this involves checking the thermometers, checking that the leak detect valve is working properly, and checking to make sure the timing device is accurate. For a HTST pasteurizer, this includes, checking the thermometers, operation of the valves, the temperature at which the diversion valve move into forward flow and back to diverted flow. The holding time is checked every 6 months.

If pasteurized Grade A products such as milk or yogurt are to be sold across state lines the facility must be inspected by a federally certified state inspector and by the federal Food and Drug Administration.

Raw Milk Offered for Sale to Consumers.

Milking Animal Health:

All milking animals shall be tested for tuberculosis and brucellosis within the 12 months prior to a producer-distributor obtaining a license to bottle raw milk, and once every 3 years thereafter. If the animals are part of the New Hampshire Department of Agriculture, Markets, and Food surveillance program, this meets the every three year testing requirement. Once again, this requirement pertains to operations bottling raw milk for sale to consumers.

General Bottling Requirements:

All containers and closures must be stored and handled in a sanitary manner to prevent contamination. Single-service containers and closures cannot be reused.

Multiple use containers must be washed, rinsed, sanitized and drained no more than 4 hours prior to filling, by using a 3-bay sink or a commercial dishwasher with a chemical sanitizer step.

Containers provided and washed by the consumer are exempt from the washing and sanitizing requirements. The filled bottles shall only be sold back to the consumer who originally washed and provided them. Any consumer-washed bottles with visible filth or contamination shall not be refilled.

Any person who bottles or handles raw milk offered for sale to consumers, who has a communicable disease shall be prohibited from handling the raw milk, and any equipment or containers which may come in contact with the raw milk.

Any person filling and capping bottles must wear effective hair coverings, and shall wash their hands immediately prior to starting and as necessary throughout the filling operation.

Bottled raw milk shall be kept cooled to a temperature of 40°F or less until delivered to the consumer.

All bulk milk storage tanks or other containers used to store raw milk prior to bottling must be washed and sanitized at least once every 48 hours.

Bottling Requirements – Small Operations

These requirements apply to anyone bottling up to 1,000 pounds of raw milk per day.

- Filling shall be done using suitable stainless steel piping equipped with a positive shut off valve not through dipping or ladling of the milk.
- Capping may be done by hand provided the operator is wearing clean, disposable plastic gloves.
- During filling, the pouring lip of the container must be protected from overhead contamination by the use of a drip deflector installed on the filling device.

Bottling Requirements – Large Operations

These requirements apply to anyone bottling more than 1,000 pounds of raw milk per day.

- Filling and capping shall be done in a sanitary manner to prevent contamination using mechanical equipment that complies with Section 7 of the PMO.
- The pouring lip of the container must be protected from overhead contamination until the cap is placed on the container.

Raw Milk Labeling Requirements

All containers shall be clearly labeled as “Raw Cow’s Milk”, “Raw Goat’s Milk” or “Raw Sheep’s Milk” as applicable.

All labels must meet federal labeling requirements including the producer’s name, address and zip code and the net amount of the contents.

All containers for retail sale shall bear the following statement: “Raw milk is not pasteurized. Pasteurization destroys organisms that may be harmful to human health.” This warning statement must be in letters of contrasting color to the label and in type no less than one-eighth (1/8) inch in height.

Raw milk sold only at the farm, where it is bottled, is exempt from the warning statement label requirement above, provided there is a sign with the following statement on it: “Raw milk is not pasteurized. Pasteurization destroys organisms that may be harmful to human health” posted conspicuously in the area where the milk is sold and placed in a location where it may easily be seen by anyone entering the room. This sign must be no less than eight (8) inches by eleven (11) inches in size with contrasting lettering no smaller than one-half (1/2) inch in height.

Raw milk sold for consumption as raw milk shall be tested for antibiotic residues prior to sale or be labeled as follows: “This raw milk has not been tested for antibiotic residues prior to sale.”

Raw milk sold only at the farm, where it is bottled, is exempt from the warning statement label requirement above, provided there is a sign with the following statement on it: "This raw milk has not been tested for antibiotic residues prior to sale" posted conspicuously in the area where the milk is sold and placed in a location where it may easily be seen by anyone entering the room. This sign must be no less than eight (8) inches by eleven (11) inches in size with contrasting lettering no smaller than one-half (1/2) inch in height.

All containers shall be labeled with a "sell by" date, and the milk shall remain in compliance with quality standards until the sell by date.

Milk bottled in containers provided by the consumer is exempt from all labeling requirements above except that the farm must have the cautionary sign as specified above posted where the milk is sold.

Sampling and Testing of Milk and Milk Products:

Testing of product by DHHS:

1. Raw and pasteurized milk:

Samples of bottled raw milk may be collected at least once each month for analysis. Raw milk for processing and pasteurized milk samples are collected for testing at least 4 out of every 6 months. This generally means that milk samples are collected 2 months in a row. If the samples are within the standards, no sample is collected in the third month and sampling is renewed the fourth month. If the samples exceed the standards, a sample is collected in the third month.

Raw milk for processing is tested for:

- Bacteria (standard plate count),
- Somatic cell count,
- Antibiotic residues, and
- Temperature.
- Tests can also be run for butterfat and total solids.

Bottled Raw milk is tested for:

- Bacteria (standard plate count),
- Coliform bacteria,
- Somatic cell count,
- Pathogens as needed due to 3/5 high Coliform counts,
- Antibiotic residues, and
- Temperature.
- Tests may also be run for butterfat and total solids.

Pasteurized milk samples are tested for:

- Bacteria (standard plate count),
- Coliform bacteria,
- Butterfat,
- Phosphatase (an enzyme which if present indicates improper pasteurization),
- Antibiotic residues, and
- Temperature.

Notices of high bacterial and somatic cell counts are issued as warnings and additional follow-up testing is done, if any 2 out of the last 4 samples exceed the standard. Milk permits and licenses are suspended if any 3 out of the last 5 samples exceed the standard.

Bottled raw milk that has exceeded the Coliform standard on 3 out of any 5 consecutive samples shall be tested for pathogens. Pathogens tested for shall include, but not be limited to, *E. coli* 0157:H7, *Listeria monocytogenes*, *Campylobacter*, and *Salmonella*. Sales of raw milk shall cease and the producer-distributor shall recall all products if any pathogens are detected in the milk. The producer-distributor shall have a written procedure, developed in consultation with the Dairy Sanitation Program, for recalling product and notifying consumers if testing of the raw milk indicates the presence of pathogens. This recall procedure shall be kept on file at the producer-distributor's facility.

2. Yogurt:

Yogurt is sampled and tested with the same frequency as pasteurized milk except that yogurt is only tested for Coliform bacteria.

3. Cheese, Ice Cream and Other Milk Products:

Samples of these dairy products are tested on a random basis. Follow-up testing is conducted when a sample exceeds the standards.

These products, including cheeses made from either raw or pasteurized milk are tested for:

- Coliform,
- Fecal coliform and
- *Staphylococcus aureus*.
- Cheese samples are randomly tested for *E.coli*, *Listeria*, and *Campylobacter*.

4. Water:

Water is tested for coliform bacteria.

Water obtained from public water supplies is not tested.

Water supplies for milk producing operations are tested at least once every 3 years.

Water supplies for milk processing operations are tested at least once every 6 months.

Follow-up samples are collected if any sample shows the presence of coliform bacteria.

Water samples are collected by the Dairy Sanitation Program and taken to the NH Public Health Lab.

5. Milk Bottles:

At Grade "A" milk plants listed on the Interstate Milk Shippers (IMS) list, returnable bottles are tested 4 months out of every 6 months. A set of 4 washed, sanitized and capped empty bottles is considered a sample. Bottles may be tested more frequently if there appears to be contamination of the milk.

At non-IMS listed plants, which use and wash returnable bottles for any milk or milk products, raw or pasteurized, the returnable bottles will be tested if bacteria counts indicate the cleaning and sanitizing of the bottles is not effective to prevent contamination of the product.

Testing Conducted by the Milk Producer/Processor:

Prior to processing, all milk must be tested for antibiotics using an approved test. Prior to the sale of bottled raw milk, all milk must be tested for antibiotics using an approved test, unless the raw milk has the appropriate label (see Raw Milk Labeling Requirement section). If any milk is received from another farm the milk must be tested for antibiotics prior to processing or to commingling with milk produced on your farm.

Antibiotic tests suitable for use on farms include:

- Charm II or Charm SL, (Charm Sciences, 659 Andover St., Lawrence, MA 01843 800-343-2170);
- Delvo Test, (Available from Nelson Jameson 800-826-8302);
- Snap test. (Idexx Laboratories, Inc., One IDEXX Drive, Westbrook, ME 04092, 800-321-0207).
- **Note: the Snap and Delvo tests have not been approved for sheep milk.**

All milking animals shall be tested for tuberculosis and brucellosis within the 12 months prior to a producer-distributor obtaining a license and once every 3 years thereafter.

Quality Standards:

Bacterial (standard plate count) standard:

- Raw milk intended for processing100,000/ml.
- Raw milk intended for retail sale 20,000/ml.
- Pasteurized Milk20,000/ml

Somatic cell count:

- Cows and Sheep Milk 750,000/ml
- Goats Milk1,000,000/ml for milk intended for consumption as fluid milk.

Coliform in bottled raw milk, raw milk yogurt, pasteurized milk and milk products including cheese 10/ml

In New Hampshire only, unofficially, 100/ml is the acceptable level for coliform in raw milk aged cheese.

Antibiotic residues none present

Pathogens.....none present

Phosphatase none present

Water No coliform present

The most recent milk quality testing results shall be conspicuously posted where the milk is sold on the farm and made available to retail customers purchasing raw milk in stores.

Fees and other costs:

Milk Producer Permit: There is no fee for this permit.

Milk Sanitation License: There is a sliding scale fee for this license depending on how much milk is processed.

- \$100.00 Up to 1,000 pounds of milk or milk products per day.
- \$175.00 1,000 – 10,000 pounds of milk or milk products per day.
- \$275.00 10,000 – 25,000 pounds of milk or milk products per day.
- \$350.00 Over 25,000 pounds of milk or milk products per day.

Inspections: There is no fee for inspections.

Sample testing:

- Raw and pasteurized milk and milk product samples: \$25 per sample for a complete analysis
- Cheese samples: There is no fee for these samples
- Milk Bottles: \$15 per bottle/\$60 per sample set of 4

Water: \$15 per sample for non IMS facilities.
 \$21 per sample for IMS listed facilities