

Chapter Ag 70

FROZEN DESSERTS

Ag 70.01	Definitions (p. 369)	Ag 70.07	Pasteurization, cooling and storing of frozen desserts or frozen dessert mixes (p. 370)
Ag 70.02	Record maintenance and retention (p. 360)	Ag 70.08	Quality standards and compliance requirements (p. 371)
Ag 70.03	Plant and premises; standards and requirements (p. 360)	Ag 70.09	Packaging and labeling (p. 373)
Ag 70.04	Personnel (p. 361)	Ag 70.10	Standard of identity of frozen yogurt, labeling (p. 373)
Ag 70.05	Equipment, installation and utensils (p. 362)	Ag 70.11	Ice cream and ice milk standards of identity (p. 374)
Ag 70.06	Equipment, cleaning and sanitizing (p. 367)		

History: Chapter Ag 70 as it existed on January 31, 1975 was repealed and a new Chapter Ag 70 was created, effective February 1, 1975.

Ag 70.01 Definitions. In addition to definitions, as applicable under s. 97.01, Stats., the following shall apply in the interpretation and enforcement of this chapter:

- (1) "Regulatory agencies" means:
 - (a) The state of Wisconsin department of agriculture, [trade and consumer protection] and
 - (b) Hotel and restaurant section of the state of Wisconsin department of health and social services and its agent cities.
- (2) "Dairy products" are products as defined in s. 97.20 (1) (b), Stats., and include products produced in accordance with chs. Ag 30 and Ag 80.
- (3) "Plant" means any place, premises, or establishment, or any part thereof, including specific areas in retail stores, stands, hotels, restaurants, and other establishments where frozen desserts or frozen dessert mixes are manufactured, processed, assembled, frozen or converted in form for distribution or sale, and includes rooms or space where utensils or equipment are stored, washed or sanitized and where ingredients for use in manufacturing frozen desserts are stored. The term "plant" includes a mobile unit and a mobile unit service base.
- (4) "Mobile unit" means any vehicle or mobile structure in which frozen desserts are manufactured, prepared, processed or converted and which is used in selling and dispensing frozen desserts.
- (5) "Mobile unit service base" means any building or premises used in connection with the operation of a mobile unit and includes buildings or premises used for the servicing, cleaning and sanitizing of mobile unit equipment and facilities, or for the storage of frozen desserts or frozen dessert ingredients.
- (6) "Frozen dessert" means ice cream, French ice cream, artificially sweetened ice cream, frozen custard, frozen concentrates, ice milk, sherbet, water ice, quiescently frozen confection, quiescently frozen dairy confection, manufactured frozen dessert mix, and frozen whipped cream confections, and includes any mix prepared or frozen as a frozen dessert or used in the making of a frozen dessert.
- (7) Frozen dessert mix or mix means the mixture of frozen dessert ingredients before being processed and frozen as a frozen dessert and

Ag 70

includes dry mixes made from previously pasteurized dairy ingredients which are recombined with potable water for the purpose of making a frozen dessert mix.

(8) "Counter and dispensing freezer" means the freezer equipment used in the soft serving or dispensing of frozen desserts directly for sale to the consumer.

(9) "C-I-P system" means food processing equipment in which pipelines or other product contact surfaces are designed, constructed and permanently installed in such a manner as to be cleaned-in-place.

History: Cr. Register, January, 1975, No. 229, eff. 2-1-75; am. (7), Register, January, 1983, No. 325, eff. 2-1-83.

Ag 70.02 Record maintenance and retention. Plant operators shall keep on file and readily accessible for inspection by regulatory agencies, for at least 12 months, complete and accurate records as follows:

(1) Record of receipt of ingredients, including invoices with the name and address of the company from which ingredients were obtained.

(2) Daily records of products manufactured.

(3) Recording temperature charts or other records showing pasteurization temperatures correctly marked as of the date pasteurization occurred on each product, and the name of the individual in charge of the pasteurization operation. The recording thermometer shall be checked daily for accuracy and the date and name of the individual who checked the thermometer shall be recorded on such temperature charts or other records for that day.

(4) Operators of a mobile unit service base shall keep a daily record of the hour during which each mobile unit serviced by him was cleaned and sanitized.

(5) Records of water sample tests.

(6) Bacteriological tests of dairy ingredients used in the manufacture of frozen desserts.

History: Cr. Register, January, 1975, No. 229, eff. 2-1-75.

Ag 70.03 Plant and premises; standards and requirements. (1) **EXTERIOR PREMISES.** The plant area shall be kept clean, orderly and free from refuse, rubbish, excessive smoke, dust, air pollution and strong or foul odors. Driveways and dirt surfaces in the immediate plant area shall be surfaced or otherwise treated to minimize dust. A draining system shall be provided for rapid drainage of all water away from the buildings, including surface water around the plant or on the premises, in such manner as to prevent a health nuisance or hazard. All frozen desserts and ingredients thereof shall be protected from contamination or depreciation in product quality.

(2) **SEWAGE AND WASTE DISPOSAL.** Sewage and industrial waste shall be disposed of in a sanitary manner and in accordance with the provisions of state and local laws or regulations. Containers used for the collection of refuse or waste shall be constructed of metal or other impervious materials, kept covered with tight fitting lids, placed outside the plant, and be cleaned before reuse. Refuse or waste shall not be allowed to accumu-

Register, January, 1983, No. 325

late in and about the premises and shall be removed as often as necessary to maintain the premises in a clean and sanitary condition.

(3) **BUILDINGS.** (a) *Construction and maintenance.* Buildings shall be of sound construction and both the exterior and interior surfaces shall be kept clean and in good repair. Buildings shall be constructed and maintained in such a manner as to prevent the accumulation of dust, dirt and mold and the entry or harboring of insects, vermin, rodents, and other animals. Floors shall be of smooth, even and impervious construction, properly sloped to drain, and be kept in good repair and clean condition. Walls and ceilings in processing areas shall be of smooth construction and readily cleanable. Walls shall be light colored and be kept clean and sanitary, except that a dark color may be used not to exceed a height of 60 inches from the floor.

(b) *Toilet facilities.* An employe toilet room shall be conveniently located and equipped with hand washing facilities with hot and cold running water, soap, and single-service towel or air drying equipment. A dressing room, if provided, where employes may change and store clothing shall be separate from processing, packaging, or storage rooms. Toilet and dressing rooms shall be properly ventilated to outer air and equipped with self-closing doors. Employe hand washing signs shall be posted in toilet rooms.

(4) **LIGHTING.** Lighting, whether artificial or natural, shall be evenly and well distributed in all processing rooms. Rooms where frozen desserts are handled, processed, manufactured or packed, or where equipment or utensils are washed, shall have at least 30 foot candles of light intensity on all working surfaces; areas where dairy products are examined for condition and quality, shall have at least 50 foot candles of light intensity on all working surfaces; and all other rooms shall have at least 5 foot candles of intensity measured 30 inches above the floor. Light bulbs and fluorescent tubes shall be protected to prevent the contamination of product, equipment or ingredients from broken glass or other contamination resulting from possible breakage.

(5) **WATER SUPPLY.** An ample supply of safe and wholesome water shall be available for all processing operations, and shall meet the requirements of state laws or regulations.

History: Cr. Register, January, 1975, No. 229, eff. 2-1-75.

Ag 70.04 Personnel. (1) **CLEANLINESS.** Plant employes shall wash their hands before beginning work and upon returning to work after using toilet facilities, eating, smoking, or engaging in other activities which may result in the soiling of their hands. The use of tobacco by any person in rooms or compartments where frozen desserts or ingredients are exposed, shall be prohibited. Clean white or light-colored washable outer garments and caps shall be worn by all persons engaged in handling dairy products, mix or frozen desserts. Paper caps or hair nets are acceptable.

(2) **HEALTH.** No person afflicted with a communicable disease, or who has a discharging or infected wound, sore or lesion on hands, arms or other exposed portions of the body, shall be permitted in any room or compartment where milk products or frozen desserts are prepared, processed or handled. Such a person may not work in any capacity involving contact with milk products or frozen desserts, or equipment

Register, January, 1983, No. 325

used in the processing or handling of milk products or frozen desserts. An employe returning to work following illness from a communicable disease shall furnish to the plant operator a certificate from a physician attesting to his complete recovery. Such medical certificates shall be kept on file at the plant office

History: Cr. Register, January, 1976, No. 229, eff. 2-1-76.

Ag 70.05 Equipment, installation and utensils. (1) EQUIPMENT. All product contact equipment, piping or connections used in the processing, manufacturing, handling or packaging, shall be constructed of stainless steel or other equally corrosive-resistant material which can be easily cleaned. No processing equipment shall be used which is rusted or corroded or in such a defective condition that it may result in contamination of frozen desserts. Plastic, rubber and rubber-like materials, or other non-metallic parts having product contact surfaces shall meet the requirements generally considered acceptable in the food processing industry. Equipment, apparatus and piping shall be so designed and installed as to be easily accessible for cleaning and shall be kept in good repair and free from cracks and corroded surfaces. Stationary equipment, including welded sanitary lines designed for in-place-cleaning, may be used subject to department approval as provided under sub. (8) (a). Where rigid pipelines are not practicable, pipelines of approved flexible plastic may be used provided they do not exceed 48 inches in length. Product pumps shall be of a sanitary type, and easily dismantled for cleaning or of specifically approved construction to allow cleaning-in-place. Cleaned-in-place sanitary piping and equipment shall be self-draining.

(2) EQUIPMENT FOR STORAGE AND DISTRIBUTION OF LIQUID SWEETENERS. Equipment for storage and distribution of liquid sweeteners shall be made of suitable metals, alloys or other material which will withstand corrosive action by the ingredients.

(3) PASTEURIZING EQUIPMENT. Pasteurizing equipment shall conform to accepted industry standards for the sanitary construction, installation, testing and operation of high-temperature short-term pasteurizers and sanitary standards for non-coil type batch pasteurizers.

(a) Installation of high-temperature short-time pasteurizers. All component equipment or optional component equipment of high-temperature, short-time pasteurizers (HTST), except heating and cooling equipment, shall be connected to each other with sanitary pipelines and fittings and so installed as not to have an adverse effect on the time, temperature, and pressure relationships of the HTST system. Such parts and equipment shall be installed to facilitate easy access for cleaning, maintenance and inspection.

1. The raw product constant level tank shall be installed so that all contents will drain to the outlet before the outlet becomes uncovered. The tank outlet shall be directly connected to the raw product inlet of the regenerative section, or when a raw product booster pump is used, the tank outlet shall be connected to the inlet of the booster pump. The tank shall be installed so that its top rim is always lower than the lowest product level in the regenerator.

2. When a product to product regeneration is employed, the pasteurized product, between its outlet from the regenerator and the nearest

point downstream open to the atmosphere, shall rise to a vertical elevation of at least 12 inches above the highest raw product level downstream from the constant-level tank, and shall be open to the atmosphere at this or a higher elevation. An effective vacuum breaker of sanitary design shall be considered as being open to the atmosphere.

3. When a plate type heat exchanger is installed, the processor shall have available for the department a diagram showing the plate port arrangement in proper operating sequence.

4. The timing pump or device shall be installed upstream from the holder and the driving motor and starter shall be inter-wired with all components.

5. Holding tube supports shall be installed and adjusted to maintain all parts of the holding tube in a fixed position, and to maintain the minimum upward slope.

6. The timing electrode fitting to the inlet of the holding tube shall be installed with sanitary fittings.

7. The temperature sensor of the recorder-controller shall be installed in the connection provided for in the recorder-controller.

8. The flow-diversion device shall be so inter-connected with the recorder-controller that at sub-legal and legal temperatures the flow diversion device will automatically assume the diverted and forward-flow positions, respectively, except that during circulating cleaning the flow-diversion device may assume the forward flow position or be cycled at sub-legal temperatures provided the control required to do this is a programmed control that is fail-safe and interlocked with the timing pump so that the timing pump cannot run under this condition.

9. The timing pump shall be inter-wired with the flow-diversion device and the recorder-controller so that the timing pump cannot run at sub-legal temperatures, unless the flow diversion device is in its fully diverted position.

10. The hot product temperature control shall be installed as part of the heating media system.

11. The hot product indicating thermometer shall be installed in the fitting at the outlet end of the holding tube.

12. The cold product indicating thermometer if provided, shall be installed in the pipeline from the outlet of the cooling section, and close to the press.

13. Connecting sanitary pipe and fittings of all components of the HTST pasteurizer shall be without dead-ends, except for openings on sanitary fittings.

14. When the heating media system is not built integral with other components of the pasteurizer, it may be installed in other than the product processing room.

15. Sanitary piping is not required for connecting the heating media unit with the heating section of the pasteurizer. However, when a plate type heat exchanger is used, the piping shall not prevent movement of the plates.

16. Water supply to the heating media system shall be protected against back flow by an air gap of not less than 2 diameters with a minimum of one inch, or other effective back flow preventive device.

17. The equipment used in recooling and recirculating of the cooling medium shall be installed, whenever practical, in other than product processing rooms.

18. Sanitary piping is not required for connecting the cooling medium unit with the cooling section of the pasteurizer. However, when a plate type heat exchanger is used, the piping shall not prevent movement of the plates.

19. Water supply of the cooling medium system shall be protected against back flow by an air gap of not less than 2 diameters with a minimum of one inch, or other effective back flow preventive device.

20. Where recirculating cooling medium is used, it shall be properly protected from contamination.

21. Control devices shall be inter-wired or piped with all component equipment or optional component equipment, and shall be readily accessible to the HTST pasteurizer operator. The control panel shall be supported to minimize vibration.

22. If a homogenizer is used as a timing pump, or if inter-wiring of homogenizer and timing pump is required, a time delay relay may be installed in the electrical circuit to the homogenizer, so that during the normal transit time of the flow diversion device the homogenizer motor will remain running. The time delay relay shall provide a delay of not more than one second. If the homogenizer motor stops, it shall not restart automatically and will not restart at sub-legal temperatures, unless the flow diversion device is in its fully diverted position. The time delay relay may be of the fixed time or adjustable time type. If the time delay relay is adjustable, means of sealing the unit shall be provided.

23. When an auxiliary pump is used in a HTST pasteurizer system, it must be installed and operated in such a way that it will not 1) interfere with the detection of, or stoppage of, the forward flow of unpasteurized product, 2) influence the proper pressure relationship within the regenerator and 3) reduce the holding time below the required minimum.

24. In a HTST pasteurizing system supplying pasteurized product to an evaporator, when a circulating auxiliary pump is installed to obtain a greater velocity through a heater than that which would be produced by the timing pump, a sanitary recirculating line between the outlet of the heater and the inlet of the circulating pump shall be provided.

25. The sanitary recirculating line shall be of the same size or larger than the inlet of the circulating pump without valves or restrictions, provided that when a smaller size line than the inlet to the circulating pump is used, and contains valves or other restrictions, the circulating pump motor shall be inter-wired with the timing pump motor.

26. All electric wiring interconnections shall be in permanent conduit, except that rubber covered cable may be used for final connection in accordance with the local electrical code, with no electrical connections to defeat the purpose of any provision of these rules.

(4) **REFRIGERATION EQUIPMENT.** Every frozen dessert plant shall be provided with suitable hardening rooms, refrigerating rooms or refrigerated cabinets with adequate space for storage of frozen desserts and perishable ingredients, commensurate with the operations conducted at the plant. Refrigeration rooms and units shall be constructed of impervious materials capable of being cleaned, and shall be kept clean and sanitary.

(5) **UTENSILS.** All utensils used in the receiving, storing, processing, manufacturing, packaging and handling of frozen desserts, or any ingredients thereof, shall be of smooth, non-absorbent, stainless steel, approved plastic or equally corrosion-resistant material and shall have flush seams. No utensils which are badly worn, rusted or corroded, or which cannot be rendered clean and sanitary by washing, shall be used. No lead solder shall be permitted to come in contact with milk, milk products or frozen desserts.

(6) **RELATED EQUIPMENT.** (a) Related equipment and utensils such as freezer cabinets for the storage or display of frozen desserts and equipment, and utensils used in the manufacturing, dispensing, and serving of frozen desserts at retail, shall be so constructed and designed as to be readily cleanable and avoid contamination of product.

(b) Counter or dispensing freezer remote mix supplying systems shall be so designed, constructed, refrigerated and equipped that all mix therein is maintained at not more than 45° F. until subject to freezing. Product pumps and flexible product line shall be maintained under continuous refrigeration or insulation when product is within the system. Systems shall be rigidly supported and sloped to drain at least one inch per 10 feet. All product lines shall be equipped with an indicating thermometer accurate to plus or minus 2° F.

(7) **C-I-P SYSTEMS.** (a) All product contact surfaces of sanitary piping utilized in C-I-P systems shall be at least as smooth as number 4 mill finish on stainless steel sheets.

(b) The finish of solution contact surfaces whether sheet, tube, casting, or other surfaces shall be equal in cleanability to stainless steel with number 4 finish or number 2-B mill finish as applied to stainless steel sheet and shall be pit free.

(c) Product lines, including equipment and solution lines shall have C-I-P fittings or welded joints.

(d) Welded joints shall be smooth and free from pits, cracks, or other defects.

(e) Removable fittings may be used with or without gaskets and shall be of such design as to form substantially flush interior joints.

(f) Appurtenances having product contact surfaces shall be cleanable, either when in an assembled position or when disassembled. Removable parts shall be readily dismountable.

(g) All internal angles of 135° or less on product contact surfaces, or on solution contact surfaces, shall have minimum radii of ¼" except where smaller radii are required for essential functional reasons, such as for sealing ring grooves and in pumps.

(h) All solution contact surfaces shall be cleanable, either when in an assembled position or when disassembled. They shall contain no pockets

or crevices that are not readily cleanable. Removable parts shall be readily demountable. Solution system appurtenances shall be accessible for inspection to determine freedom from biological, chemical, or physical soil contamination.

(i) Non-product contact surfaces shall have a smooth finish, be free of pockets and crevices, and be readily cleanable.

(8) INSTALLATION OF C-I-P PIPELINE CIRCUITS. (a) Prior to installation of C-I-P pipeline circuits a drawing or equivalent plan shall be made available to the department by the plant operator for each installation, or subsequent addition or modification, showing each permanent circuit to be cleaned, noting thereon the size and length of piping, fittings, pitch, drain points, access points, relative elevations, locations and specifications of circulating unit, and other pertinent data.

(b) The C-I-P pipeline together with gaskets if used, shall be supported so that they remain in alignment and position. The support system shall be designed so as to preclude electrolytic action between supports and pipelines.

(c) Each separate cleaning circuit, including product and solution lines, shall be provided with a sufficient number of access points, such as valves, fittings, or removable sections to make possible adequate inspection and examination of the interior surfaces.

(d) Relatively horizontal lines shall be self-draining and pitched to drain points.

(e) The circulating unit, consisting of a motor driven pump and solution tank, shall provide a minimum average solution velocity at any instance of not less than 5 feet per second through each pipe or fittings in the circuit. If split flow arrangement, pressure differential must be maintained to serve the 5 feet per second minimum flow rate. This operation is to be checked by observation and tests.

(f) C-I-P systems shall be designed so that the suction intake of the primary circulating pump shall be flooded at all times during the cleaning cycle.

(g) Solution temperature shall be automatically controlled by the use of a temperature regulator with a response range of plus or minus 5° F.

(h) The system shall be provided with a recording thermometer having a scale range of 60° to 180° F. with extension of scale on either side permitted, graduated in time scale divisions of not more than 15 minutes. Between 110° and 180° F., the chart shall be graduated in temperature divisions of not more than 2° F., spaced not less than 1/16 inch apart, and be accurate within 2° F., plus or minus. The sensor shall be protected against damage at 212° F. The sensing element of the recording thermometer shall be located in the return solution line as near the solution tank as possible.

(i) All connections between the solution circuit and the product circuit shall be so constructed as to positively prevent the commingling of the product and the solution during processing.

(j) All welding of sanitary product pipelines and solution lines shall be made by the Tungston Shield Arc Method or its equivalent. The following precautions shall be taken:

1. Inner backup gas shall be used to protect and control the interior of the weld.

2. The weld surface interior, face and exterior shall be cleaned and free of all foreign matter and surface oxide before welding. Iron free abrasives shall be used when cleaning surfaces.

3. All tube and fitting ends shall be square cut and deburred.

4. Welding procedures shall assume uniform and complete penetration of weld at all times.

5. All welds having pits, craters, ridges, or imbedded foreign materials shall be removed and the joints shall be properly rewelded.

6. Internal and external grinding or polishing of welds is not required.

7. An acceptable sample weld piece shall be provided at the beginning of each day or when required.

8. A boroscope or other acceptable inspection device, to inspect representative welds, shall be made available by the plant operator.

(9) COUNTER AND DISPENSING FREEZER REMOTE MIX SUPPLY SYSTEMS. Remote mix supply systems for counter and dispensing freezers shall be exempt from normal C-I-P requirements with respect to the following:

(a) A circulating pump is not required but other circulating devices may be used that will produce adequate cleaning velocities.

(b) Atmospheric breaks between cleaning circuits and product contact surfaces that are not an integral part of the system will not be required, providing double valves, either manual or automatic, are installed between the cleaning surface and any product or equipment not included within the cleaning system.

(c) Systems must be rigidly supported and sloped to drain at least one inch per 10 feet. Continuous flexible plastic lines that are rigidly supported are permitted up to 30 feet if they are one continuous length and contain sanitary fittings on terminal ends.

(d) Flexible plastic lines may be used with no support up to 4 feet in length. Flexible plastic lines may be used as jumpers between rigidly supported plastic product line and return systems.

(e) Recorder controllers and automatic temperature controllers are not required on cleaning systems for remote mix supply systems for counter and dispensing freezer equipment.

(f) All circulating systems, including valves, shall be so designed as to be completely self-draining of all cleaning and sanitizing solutions.

(10) DRY FROZEN DESSERT MIXES. The addition of potable water alone will not require repasteurization providing that the water is added to a sealed single batch container of pasteurized dry mix.

Note: Equipment which conforms to the current "3-A Sanitary Standards" published by the International Association of Milk and Food Sanitarians, Inc. in the Journal of Milk and

Ag 70

Food Technology or the "Listing of Food Service Equipment" published by the National Sanitation Foundation, P.O. Box 1468, Ann Arbor, Michigan 48106, will meet the requirements of this section.

History: Cr. Register, January, 1975, No. 229, eff. 2-1-75; cr. (10), Register, January, 1983, No. 325, eff. 2-1-83.

Ag 70.06 Equipment cleaning and sanitizing. (1) EQUIPMENT. Equipment, sanitary piping and utensils used in receiving, storing, processing, manufacturing, packaging and handling frozen desserts and ingredients thereof, and all product contact surfaces of homogenizers, high pressure pumps, and lines shall be kept clean. Such cleaning shall be done at the end of each day's operation. Packing glands on all agitators, pumps, and vats shall be inspected regularly and kept clean. Before use, all equipment coming in contact with milk products or frozen desserts shall be subject to an effective bactericidal or sanitizing treatment. Equipment not designed for cleaned-in-place cleaning shall be disassembled, thoroughly cleaned and sanitized. No cleaners, detergents, wetting or sanitizing agents adversely affecting or contaminating frozen desserts or ingredients thereof, shall be used. Steel wool or metal sponges shall not be used in the cleaning of dry ingredient or other non-product surface equipment or utensils. Such equipment shall be thoroughly vacuumed with a heavy duty vacuum cleaner or by other effective means, and materials thus obtained shall be incinerated or otherwise disposed of so that any insects are destroyed and milk products and frozen desserts will not be contaminated. Any exhaust stacks, elevators and elevator pits, conveyor and similar facilities shall be inspected and cleaned at regular intervals.

(2) CLEANING AND SANITIZING PROCEDURE OF C-I-P PIPELINE CIRCUITS. C-I-P cleaning shall be used only for equipment and pipeline systems designed, engineered, and installed for C-I-P cleaning.

(a) An effective rinsing, cleaning and sanitizing program shall be adopted by plant operators to keep C-I-P systems in a clean condition. Because of the possibility of corrosion, the recommendations of the cleaning compound manufacturer shall be followed with respect to the circulating time, temperature, and concentration of specific acid or alkaline solutions and bactericides to be used. To insure proper strength of solution and to avoid corrosion, the cleaning compound shall be completely dissolved or dispersed prior to circulation.

(b) Immediately after concluding the day's operations, all connections between cleaned-in-place lines and processing equipment not included in the cleaning circuit shall be removed, the openings capped, bypass connections made, and the lines rinsed thoroughly with tempered water not less than 120° F., continuously discarding the rinse water near the downstream end of the solution return line until the discarded effluent is clear.

(c) All solution and product contact surfaces not cleanable by mechanical cleaning procedures shall be cleaned manually.

(d) An effective detergent solution shall be circulated through the C-I-P circuit for a period of time at a concentration and temperature capable of effectively removing the soil residue in the circuit. The detergent shall be rinsed thoroughly from the circuit. An acid detergent may be used, when needed, as a supplement to the routine circulation.

Acid detergent treatment shall be followed with a thorough rinsing of the circuit.

(e) All product contact surfaces shall be sanitized with one or a combination of the following methods:

1. The circulation of water at a minimum temperature of 170° F. at the discharge end through the circuit for 5 minutes and drain.

2. The pumping of an approved chemical sanitizer solution of acceptable strength and recommended temperature through product lines and equipment for at least one minute and drain.

3. The use of steam at a temperature of 170° F. at the drainage outlet for 15 minutes or at a temperature of 200° F. for 5 minutes.

(3) **CLEANING OF COUNTER AND DISPENSING FREEZERS.** (a) Counter and dispensing freezers shall be cleaned at the end of each day's operation, or in the event of continuing operations, at intervals of not more than 24 hours, in accordance with the following instructions:

1. Remove mix valve.

2. Rinse the mix tank and cylinder with warm water, turning machine control switch to "wash" for not more than 10 seconds. Then drain through front gate. (It is extremely important that warm water be used since the sudden application of hot water may damage a cold cylinder.)

3. Clean the machine by putting into the mix tank a liberal amount of hot detergent solution exactly as instructed by manufacturer of the detergent. Once a week or as needed use an acid milkstone remover solution exactly as instructed by the manufacturer of the machine in place of the detergent solution. Brush the mix tank surface through the hole connecting the mix tank and cylinder, while the solution flows into the cylinder. Turn machine control switch to "wash" for not more than 5 minutes.

4. After first wetting brush in detergent solution, brush through the hub drain tube and rinse.

5. Remove front and dasher assembly. Remove scraper blade and product seal from dasher. Brush dasher drive shelf hub hole, first wetting brush in detergent solution. Reinstall dasher and cylinder. If equipped with hub brush, install hub brush over dasher drive shaft. Reinstall dasher cylinder front with hub brush in place.

6. Pour 2 quarts of warm water in mix tank, turning switch to "wash" while water is draining into cylinder. Allow water to drain through front gate.

7. Disassemble machine. Scrub all parts in detergent solution and brush through all holes. Remove and wash drip tray and mix cover and allow above to air-dry overnight.

8. Thoroughly wash hands before assembling machine, then prepare an ample amount of sanitizing solution exactly as instructed by the counter freezer manufacturer.

9. With machine fully assembled, pour the solution into the mix tank and use brush to wet all surfaces which come into contact with the mix.

Ag 70

10. Turn the machine control switch to wash for a period not to exceed 10 seconds. Then let machine set 15 minutes.

11. Open front gate and drain. Machine is now ready to add mix.

(b) If machine design does not permit the functions in par. (a) 4. and 5., follow procedures outlined in par. (a) 6. through 11. in order.

(4) **SANITIZING.** Sanitizing shall be accompanied by one of the following methods:

(a) By the use of hot water, which after remaining in contact with equipment for not less than 2 minutes, has a temperature of not less than 170° F.

(b) By the use of steam under pressure for a period of not less than 2 minutes or until all parts of the equipment being sanitized have reached a temperature of 170° F., or the condensate off the equipment remains at a temperature of not less than 170° F. for at least 2 minutes.

(c) By the use of chlorine with a residual of not less than 100 ppm. after one minute contact with the equipment, or if sprayed, with a residual of not less than 100 ppm. after 5 minutes.

(d) By other sanitizers used in a manner approved by the regulatory agencies.

History: Cr. Register, January, 1975, No. 229, eff. 2-1-75.

Ag 70.07 Pasteurization, cooling and storing of frozen desserts or frozen dessert mixes. (1) **PASTEURIZATION.** All frozen dessert mixes, with the exception of water ice mix and flavoring agents used in frozen desserts and dry frozen dessert mixes, shall be pasteurized at point of manufacture.

(2) **BATCH PASTEURIZATION TEMPERATURES.** Batch pasteurization of frozen dessert mixes shall be accomplished by heating every particle in accordance with the following time and temperature schedule:

(a) 155° F. for 30 minutes, or

(b) 160° F. for 15 minutes, or

(c) 165° F. for 10 minutes.

(3) **HIGH-TEMPERATURE SHORT-TIME PASTEURIZERS.** (a) No HTST pasteurizers may be used unless the thermo limit controller and the timing pump are set and sealed by the department. The seal shall not be removed without the approval of the department. The system shall be operated in such a manner that the product cannot by-pass the controller sensor. In no event shall the controller sensor be removed from its correct position during the pasteurization process.

(b) HTST pasteurization of frozen dessert mix shall be accomplished by heating every particle in accordance with the following minimum time and temperature schedules:

1. 175° F. for 20 seconds, or

2. 180° F. for 15 seconds, or

3. 200° F. for 3 seconds, or

Register, January, 1983, No. 325

- 4. 210° F. with no holding time requirement, or
- 5. Any other equivalent temperature and pasteurization time period as approved by the department in writing.

(4) **COOLING.** Immediately after pasteurization all mix shall be cooled to a temperature of not more than 45° F. and held at a temperature of not more than 45° F. until the mix enters the freezing unit. Any milk, cream, and other fluid milk products used in the manufacture of frozen desserts or frozen dessert mixes, other than sterilized, evaporated or sweetened condensed milk in hermetically sealed containers, shall also be stored at temperatures of not more than 45° F. Temperatures specified herein shall apply in transporting frozen dessert mixes from the manufacturing or other plant to retail manufacturers.

(5) **STORAGE.** (a) *Utensils and equipment.* Utensils and portable equipment used in processing, handling or packaging frozen desserts shall be stored above the floor in clean, dry locations, and in a self-draining position on racks constructed of impervious, corrosion-resistant material.

(b) *Supplies and containers.* Supplies and containers, other than those being used in the conduct of processing operations, shall be kept in a room separate from rooms where processing, handling and packaging operations are conducted, and under conditions whereby such materials will be kept clean, free from dust, moisture, insects, rodents or other sources of contamination. Supplies and processing equipment shall not be located under cold water pipes or under liquid waste disposal lines, and shall be so arranged as to permit ready access thereto and permit cleaning of the storage area. Caps, parchment papers, wrappers, liners, gaskets, and single service sticks, spoons, covers and containers for frozen desserts or their ingredients shall be purchased and stored only in sanitary tubes, wrappings or cartons and shall be handled in a sanitary manner.

(c) *Insecticides and rodenticides.* Insecticides and rodenticides shall be plainly labeled, segregated and stored in a separate room or cabinet away from packaging supplies or edible materials.

(d) *Raw milk products.* Raw milk products for use in frozen desserts shall be stored and held at a temperature of 45° F. or lower until used in processing.

(e) *Non-refrigerated products.* Products such as non-fat dry milk and other frozen dessert ingredients which do not require refrigeration, shall be placed in dry storage off the floor, arranged in such a manner as to be readily accessible for inspection and removal, and to permit adequate cleaning of the storage room. Such products shall not be stored with any other product, which may contaminate or damage them or impair their quality. Containers from which product has been partially removed shall be kept covered to prevent contamination of remaining content.

(f) *Ingredients requiring refrigeration.* All products which require refrigeration shall be stored under such conditions of temperature and humidity as necessary to preserve their wholesome quality and condition. Ingredients shall not be stored on floors or be exposed to foreign odors or

Ag 70

conditions such as the dripping or condensation of moisture which may contaminate them or their containers.

History: Cr. Register, January, 1975, No. 229, eff. 2-1-76; am. (1), Register, January, 1983, No. 325, eff. 2-1-83.

Ag 70.08 Quality standards and compliance requirements. (1) MILK PRODUCTS USED IN FROZEN DESSERTS. Milk products used in the manufacture of frozen desserts shall meet the following standards:

(a) Product	Standard Plate Count Not to Exceed
Raw Milk	1,000,000 per ml
Pasteurized Milk	100,000 per ml
Raw Cream	1,000,000 per ml
Pasteurized Cream	100,000 per ml

(b) Butter, 80% cream, plastic cream, mixtures of butterfat, sugar or sweetening agent, moisture and flavoring, condensed milk, mixes and all other similar products shall conform to the following standards:

1. Standard Plate Count—Not to exceed 100,000 per gram prior to pasteurization at the frozen dessert plant.

2. Coliform Count—Not to exceed 10 per gram prior to pasteurization at the frozen dessert plant.

(c) Dry whole milk, powdered non-fat dry milk, dry whey or dry buttermilk, shall be U.S. Extra Grade or its equivalent.

(2) **FINISHED PRODUCTS.** After pasteurization, frozen desserts or frozen dessert mixes shall not contain in excess of 10 coliform per gram or in excess of 50,000 plate count of bacteria per gram at any time up to time of sale except that dry frozen dessert mixes packaged in a sealed single batch container shall not have a coliform count in excess of 10 per gram nor a bacterial count in excess of 20,000 per gram.

(3) **STANDARD TEST METHODS.** Bacterial plate counts, coliform determinations, phosphatase tests, and other laboratory tests shall be conducted in accordance with standard methods and procedures of analysis as prescribed in "Standard Methods for the Examination of Dairy Products", Thirteenth Edition (1972), copies of which are on file at the offices of the department of agriculture, secretary of state and revisor of statutes, and which may be obtained from American Public Health Association, Inc., 1015 Eighteenth Street, NW, Washington, DC.

(4) **ENFORCEMENT.** Regulatory agencies may obtain samples of dairy product ingredients, frozen desserts and frozen dessert mixes for testing to determine compliance with bacteriological and coliform standards under this section. Samples shall be taken on separate days from unopened containers. Whenever 2 of the last 4 consecutive samples tested in any 12 month period fail to conform to standards prescribed in this section, the plant operator shall be served with a written warning notice of this fact. The failure of 3 of the last 5 consecutive samples tested in any 12 month period to conform to such standards, shall be cause for the suspension of any license or permit or the taking of such other enforcement action as may be authorized under ch. 97, Stats., or other applicable statutes or rules relating to the processing, sale, or distribution of adulterated or misbranded foods.

(5) **PRODUCT RETURNS.** Frozen desserts shipped from the plant on sale or consignment, and returned in broken or opened containers or in containers from which product has been partially removed, may be accepted by the plant for credit determination but shall not be sold or used for human consumption.

(6) **DRIPPINGS OR SPILLED PRODUCTS.** The use of drippings or spilled products in the processing or sale of frozen desserts is prohibited.

History: Cr. Register, January, 1975, No. 229, eff. 2-1-75; am. (2), Register, January, 1983, No. 325, eff. 2-1-83.

Ag 70.09 Packaging and labeling. (1) **PACKAGING.** Frozen desserts shall be packaged in commercially acceptable containers and packaging materials which will protect the quality of the product from possible contamination in regular channels of trade. The packaging, cutting, molding, dispensing and other handling or preparation of frozen desserts and their ingredients shall be conducted in a sanitary manner.

(2) **MULTI-USE CONTAINERS.** Metal and fiber glass multi-use cans or containers for frozen desserts or frozen dessert mixes shall be kept clean and dry. When used for transporting frozen dessert mixes they shall be rinsed immediately after emptying, be cleaned upon return to the plant, and protected from contamination during periods of storage. Metal cans and containers shall be free from rust and corrosion. Paper and plastic containers, liners, covers or other materials coming in contact with frozen desserts and frozen dessert mixes shall be so kept, handled, stored, and used as to prevent their contamination. Single-service paper and plastic containers are non-returnable and shall not be reused for any frozen desserts, frozen dessert mixes or their ingredients.

(3) **LABELING.** (a) All packages of frozen desserts, including cans or other containers of frozen dessert mixes, shall be labeled in compliance with state and federal labeling laws.

(b) Labels on cans or packages of frozen desserts and frozen dessert mixes shall include thereon the name and address of the manufacturing plant, or a code number assigned to the plant by the department. If more than one plant is operated by the same manufacturer, the name and address or code number on the label shall be that of the plant where the product was actually manufactured.

(c) The label on all packages of ice cream mix and ice milk mix shall include the percent of milk fat present in the mix and a statement of all ingredients comprising the mix in descending order of prominence by weight.

(4) Dry frozen dessert mixes shall be packaged in single batch containers such that the total content of the dry mix will be reconstituted with potable water at one time in the container. Such packaging shall be in a manner that the container is sealed prior to the addition of the potable water.

History: Cr. Register, January, 1975, No. 229, eff. 2-1-75; cr. (3) (c) and (4), Register, January, 1983, No. 325, eff. 2-1-83.

Ag 70.10 Standard of identity of frozen yogurt, labeling.

(1) Frozen yogurt is a food which shall be prepared by freezing while stirring a mix composed of one or more of the following ingredients, whole milk, lowfat milk, skim milk or other milk products, with or with-

Register, January, 1983, No. 325

Ag 70

out fruits, nuts, flavoring materials, sweeteners, stabilizers, and emulsifiers, as authorized under section 20.1, 21 Code of Federal Regulations, Part 20, and any other safe and suitable ingredient approved by the department. Each ingredient contained in the mix, with the exception of fruits, nuts, and flavoring materials, shall be pasteurized. The mix after pasteurization, or the whole milk, lowfat milk, skim milk or other milk products after pasteurization and before becoming part of the mix, shall be cultured at the pasteurization plant by one or more strains of approved bacterial cultures. The cultured portion of the mix shall be at least 25% of the final mix. The name of the finished product is frozen yogurt. It shall weigh not less than 5 pounds per gallon and the milk fat content shall be not less than 0.5 percent nor more than 7%.

(2) All provisions of this chapter shall apply to frozen yogurt and frozen yogurt mix, except the standard plate count under s. Ag 70.08 (1) (b) 1., shall not apply after the addition of the approved bacterial culture.

(3) The label on a package of frozen yogurt, in addition to other required information, shall contain an ingredient declaration in descending order of predominance and a butterfat declaration.

(4) Frozen yogurt mix is a mixture of frozen yogurt ingredients before being processed and frozen as a frozen yogurt.

History: Cr. Register, May, 1977, No. 257, eff. 6-1-77.

Ag 70.11 Ice cream and ice milk standards of identity. Ice cream and ice milk shall conform to the standards of identity in Title 21, Code of Federal Regulations, Sections 135.110 and 135.120 respectively. In addition to the required percentages of milk fat and nonfat milk solids (NFMS), the following minimum levels of protein for the corresponding levels of milk fat and NFMS shall be present in ice cream and ice milk sold in this state.

ICE CREAM

Percent Milk Fat	Minimum Percent Nonfat Milk Solids	Minimum Percent Protein
10	10	2.70
11	9	2.55
12	8	2.40
13	7	2.25
14	6	2.10

ICE CREAM CONTAINING BULKY FLAVORS

Percent Milk Fat	Minimum Percent Nonfat Milk Solids	Minimum Percent Protein
8	8	2.40
9	8	2.40

Register, January, 1983, No. 325

ICE MILK

Percent Milk Fat	Minimum Percent Nonfat Milk Solids	Minimum Percent Protein
2	9	2.55
3	8	2.40
4	7	2.25
5	6	2.10
6	5	1.95
7	4	1.80

The minimum levels of protein for ice cream and ice milk sold in this state shall have a protein efficiency ratio of not less than that of whole milk, or 108 percent of caseinate by weight of the food.

History: Cr. Register, January, 1983, No. 325, eff. 2-1-83.