Michigan Department of Agriculture

Summary of Requirements for Michigan Dairy Processing Plants

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Introduction

This booklet provides a summary of the State of Michigan requirements for the processing of milk and milk products for human consumption. The Michigan Department of Agriculture's (MDA) Food and Dairy Division is responsible for licensing, inspecting and sampling dairy plants in the State of Michigan. MDA derives its regulatory authority from Michigan's Manufacturing Milk Law of 2001, 2001 P.A. 267, MCL 288.561 et. seq. and the Grade "A" Milk Law of 2001, 2001 P.A. 266, MCL 288.471 et. seq., which adopts the U.S. Department of Health and Human Services, Food and Drug Administration *Grade "A" Pasteurized Milk Ordinance* ([1]PMO). The dairy law documents are available on the Internet at **www.michigan.gov/mdadairylaws,** and **www.fda.gov**, key word PMO for the Pasteurized Milk Ordinance. The Manufacturing Milk Law covers dairy products, such as cheese, butter and ice cream, while the Grade A Milk Law and the PMO covers fluid milk, cottage cheese, sour cream and yogurt products.

All processors must obtain a license from MDA prior to producing dairy products for sale. The first step toward licensing your dairy plant is to contact the MDA Dairy Section in the Lansing office at 517-373-1060. You will be given contact information for your area's MDA dairy inspector who will be inspecting your facility. By contacting your local dairy inspector early, he or she can be an excellent source of information about dairy processing and help you get off to a good start.

You are encouraged to take steps to research your concept and complete a feasibility study and market analysis. The Michigan State University (MSU) Product Center can be an excellent resource to help in the creation of a new business. The MSU Product Center provides business and technical assistance, market research, assistance with business plan development and entrepreneurial education. Many of their services are available free of charge. Further information can be obtained on the Product Center website, **www.productcenter.msu.edu** or by telephone at 517-432-8750.

Before starting new plant construction, remodeling and process or equipment changes, you need to submit plans to your MDA inspector. These plans need to include a site map and equipment layout design of the facility. Plans must also provide for operational or physical isolation of the milk plant from sources of potential product contamination caused by animal production facilities located close to the milk plant. Working with your dairy inspector on planning your facility will help ensure that regulations are met, avoiding potentially costly construction changes.

You should also check into local, state and federal labor, safety, environmental protection, zoning and tax laws.

Once a dairy plant is inspected, approved and licensed, MDA conducts routine, unannounced inspections. Dairy products, water and the raw milk supply, are routinely sampled by MDA, and must meet the minimum standards required by law. Dairy plants must continuously meet all applicable legal operation and sanitation requirements.

Keeping the Farm Environment Separate From the Dairy Plant

[1] A copy of the Pasteurized Milk Ordinance may be obtained from the Department of Health and Human Services, Public Health Service, Food and Drug Administration, Milk Safety Branch (HFS-626), 5100 Paint Branch Parkway, College Park, MD 20740-3835.

Plant Location

The environment surrounding a dairy processing facility is an extremely important consideration. A dairy plant located in close proximity to livestock presents special concerns. Consider the following when choosing the location for a dairy plant.

- **Prevailing winds:** The processing areas should not be downwind to strong odors from animal housing or feed and manure storage. Adequate air filtering devices must be installed on air inlet fans to prevent the entrance of dirt and dust, and exhaust outlets must be screened or have self-closing louvers to prevent the entrance of insects.
- **Proximity to livestock:** Visitors to your facility may enjoy seeing your animals, but unfortunately, maintaining the cleanliness needed in a milk processing plant is difficult when animals are just outside the entrance. Insect control alone can be an insurmountable task when animals and the manure they produce are close by. Animal odors and the dust created by feeding and bedding can also be problematic.
- **Runoff:** Water running from animal housing into plant traffic areas during heavy rains can and will introduce manure into areas where it can contaminate the processing area and products.
- **Accessibility:** Provide easy access for trucks delivering supplies to the plant and shipping product out of the plant without crossing through areas contaminated by livestock waste.

Personnel Traffic Patterns

- It is important to maintain a clean environment in and around a dairy plant. This can only be accomplished by controlling the cleanliness of the people who walk through and work in your facility. Clean clothes and footwear, as well as adequate hair and beard covering, is required for anyone working in or visiting the plant.
- Employees who work with or around livestock should not be allowed to enter the processing plant without a shower, complete change of clothes and footwear. It is extremely important to strictly maintain this policy in order to help prevent the spread of pathogenic organisms commonly found in farm environments.
- Post pasteurization contamination of dairy products is a leading cause of product recall. Bacteria such as *Listeria monocytogenes*, *Salmonella*, *Campylobacter*, *Coliform,* and many others are serious public health threats. Stringent efforts must be made minimize the possible entrance of these pathogens into the dairy plant environment.

Always approach the dairy plant with concern for preventing disease transmission in mind. At facilities where the dairy plant is on the same premise as the dairy farm, all traffic should visit the dairy plant prior to visiting the dairy farm. Avoid driving or walking through barnyards, feed lots, manure, and feed storage or holding areas.

Summary and Interpretation from the PMO, Michigan's Grade A Milk Law and the Manufacturing Milk Law

The following is a summary of the dairy processing plant requirements and excerpts from the PMO. For complete requirements, please see the Grade A Milk Law, Manufacturing Milk Law and PMO. Please note that the numbering system used below matches the PMO and the dairy plant inspection form used by MDA dairy inspectors. A copy of this form is provided at the back of this booklet. The PMO requires each Grade A dairy plant to be inspected by MDA at least once every three months. The Manufacturing Milk Law requires all manufacturing milk plants to be inspected at least once every six months.

ITEM 1p. FLOORS - CONSTRUCTION

The floors of all rooms in which milk or milk products are handled, processed, packaged, or stored; or in which milk containers, utensils and/or equipment are washed, shall be constructed of concrete or other equally impervious and easily cleanable material; and shall be smooth, properly sloped, provided with trapped drains and kept in good repair. Provided, that cold storage rooms used for storing milk and milk products need not be provided with floor drains when the floors are sloped to drain to one (1) or more exits. Provided further, that storage rooms for storing dry ingredients, packaged dry ingredients, packaged dry milk or milk products, and/or packaging materials need not be provided with drains and the floors may be constructed of tightly joined wood.

PUBLIC HEALTH REASON

Floors constructed of concrete or other similarly impervious material can be kept clean more easily than floors constructed of wood or other pervious or easily disintegrating material. They will not absorb organic matter and are; therefore, more apt to be kept clean and free of odors. Properly sloped floors facilitate flushing and help to avoid undesirable conditions. Trapping of drains prevents sewer gas from entering the milk plant.

ITEM 2p. WALLS AND CEILINGS - CONSTRUCTION

Walls and ceilings of rooms in which milk or milk products are handled, processed, packaged, or stored; or in which milk containers, utensils and/or equipment are washed, shall have a smooth, washable, light-colored surface and be in good repair. All new or extensively remodeled facilities must provide a covered or enclosed receiving, washing and sanitizing facility at each site that receives or ships milk or dairy products.

PUBLIC HEALTH REASON

Properly finished walls and ceilings are more easily kept clean and are; therefore, more apt to be kept clean. A light-colored finish aids in the even distribution of light and the detection of unclean conditions.

ITEM 3p. DOORS AND WINDOWS

Effective means shall be provided to prevent the access of insects and rodents. All openings to the outside shall have solid doors or glazed windows, which shall be closed during dusty weather. All outer openings are protected by screens, air curtains or other effective means. The Manufacturing Milk Law allows for screened doors and windows and exterior screen doors must open outward.

PUBLIC HEALTH REASON

Freedom from insects in the milk plant reduces the likelihood of contamination of the milk or milk product.

ITEM 4p. LIGHTING AND VENTILATION

All rooms in which milk or milk products are handled, processed, packaged, or stored; or in which milk containers, utensils and/or equipment are washed shall be well lighted and well ventilated. There are minimum lighting requirements. Install adequate air filtering devices on air inlet fans and ensure that each exhaust outlet is screened or provided with self-closing louvers to prevent the entrance of insects when not in use. Provide adequate electrical power for on-demand support of lighting, cooling, heating, agitation and ventilation systems.

PUBLIC HEALTH REASON

Ample light promotes cleanliness. Proper ventilation reduces odors and prevents condensation upon interior surfaces.

ITEM 5p. SEPARATE ROOMS

There shall be separate rooms for:

1. The pasteurizing, processing, cooling, reconstitution, condensing, drying and packaging of milk and milk products.
2. Packaging of dry milk or milk products.
3. The cleaning of milk cans and containers, bottles**,** cases and dry milk or milk product containers.
4. The fabrication of containers and closures for milk and milk products.
5. Cleaning and sanitizing facilities for milk tank trucks in milk plants receiving milk or whey in such tanks.
6. Receiving cans of milk and milk products in milk plants receiving such cans.
7. Boiler room or shop/utility room.
8. A separate room is required for the cleaning and preparation of bulk cheese and also a separate room for the cutting and wrapping operation.

Rooms in which milk or milk products are handled, processed, stored, condensed, dried and packaged, or in which containers, utensils and/or equipment are washed or stored, shall not open directly into any stable or any room used for domestic purposes. All rooms shall be of sufficient size for their intended purposes. Designated areas or rooms shall be provided for the receiving, handling and storage of returned packaged milk and milk products.

PUBLIC HEALTH REASON

If the washing and sanitization of containers are conducted in the same room in which the pasteurizing, processing, cooling, condensing, drying or packaging is performed, there is opportunity for the pasteurized product to become contaminated. For this reason, separate rooms are required as indicated.

ITEM 6p. TOILET-SEWAGE DISPOSAL FACILITIES

Every milk plant shall be provided with toilet facilities conforming to the regulations of the State of Michigan. Toilet rooms shall be located in the plant and shall not open directly into any room in which milk and/or milk products are processed. Toilet rooms shall be completely enclosed and shall have tight-fitting, self-closing doors. All windows must be effectively screened. Dressing rooms, toilet rooms and fixtures shall be kept in a clean condition, in good repair and shall be well ventilated and well lighted. Sewage and other liquid wastes shall be disposed of in a sanitary manner.

PUBLIC HEALTH REASON

Human excreta are potentially dangerous and must be disposed of in a sanitary manner. The organisms causing typhoid fever, para-typhoid fever and dysentery may be present in the body discharges of active cases or carriers. Sanitary toilet facilities are necessary to protect the milk or milk product, containers, utensils and equipment from fecal contamination, which may be carried by insects, hands or clothing. When the toilet facilities are of a satisfactory type, are kept clean and are in good repair, the opportunities for the spread of contamination by the above means are minimized. The provision of an intervening room or vestibule between the toilet room and any room in which milk or milk products are processed, condensed or dried makes it less likely that contaminated insects will enter these rooms. It will also minimize the spread of odors. The wastes resulting from the cleaning and rinsing of containers, utensils, equipment and floors, from flush toilets, and from washing facilities, should be properly disposed of so as not to contaminate the milk containers, utensils or equipment, or to create a nuisance or a public health hazard.

ITEM 7p. WATER SUPPLY

Hot and cold water for milk plant purposes shall be from a supply properly located, protected and operated and shall be easily accessible, adequate and of a safe, sanitary quality. All water supplies are inspected and sampled by MDA. The local health department approves the location of the well. No well pits or buried well casings are allowed for use in facilities licensed or permitted by MDA.

PUBLIC HEALTH REASON

The water supply should be accessible in order to encourage its use in cleaning operations; it should be adequate so that cleaning and rinsing may be thorough; and it should be of a safe, sanitary quality in order to avoid the contamination of containers, utensils and equipment.

ITEM 8p. HANDWASHING FACILITIES

Convenient hand washing facilities shall be provided, including hot and cold and/or warm running water, soap and individual sanitary towels or other approved hand-drying devices. Trash containers must be covered. Hand washing facilities shall be kept in a clean condition and in good repair.

PUBLIC HEALTH REASON

Proper use of hand washing facilities is essential to personal cleanliness and reduces the likelihood of contamination of milk and milk products.

ITEM 9p. MILK PLANT CLEANLINESS

All rooms in which milk and milk products are handled, processed or stored; or in which containers, utensils and/or equipment are washed or stored, shall be kept clean, neat and free of evidence of insects and rodents. Only equipment directly related to processing operations or the handling of containers, utensils and equipment shall be permitted in the pasteurizing, processing, cooling, condensing, drying, packaging, and bulk milk or milk product storage rooms.

PUBLIC HEALTH REASON

Clean floors, free of litter and clean walls and ceilings, as well as all other areas of the milk plant are conducive to clean milk and milk product handling operations. Cleanliness and freedom from insects and rodents reduces the likelihood of contamination of the milk or milk product. Excess or unused equipment or equipment not directly related to the milk plant operations can be detrimental to the cleanliness of the milk plant.

ITEM 10p. SANITARY PIPING

All sanitary piping, fittings and connections which are exposed to milk and milk products or from which liquids may drip, drain or be drawn into milk and milk products shall consist of smooth, impervious, corrosion-resistant, non-toxic, easily cleanable material, which is approved for milk product-contact surfaces. All piping shall be in good repair. Pasteurized milk and milk products shall be conducted from one piece of equipment to another only through sanitary piping.

PUBLIC HEALTH REASON

Milk piping and fittings are sometimes so designed as to be difficult to clean, or they may be constructed of metal, which corrodes easily. In either case, it is unlikely that they will be kept clean. Sanitary milk piping is a term, which applies to properly designed and properly constructed piping. The purpose of the third sentence is to prevent exposure of the pasteurized milk or milk product to contamination.

ITEM 11p. CONSTRUCTION AND REPAIR OF CONTAINERS AND EQUIPMENT

All multi-use containers and equipment that milk and milk products come into contact with shall be of smooth, impervious, corrosion-resistant, non-toxic material; shall be constructed for ease of cleaning; and shall be kept in good repair. All single-service containers, closures, gaskets and other articles that milk and milk products come in contact with shall be non-toxic and shall have been manufactured, packaged, transported and handled in a sanitary manner. Articles intended for single-service use shall not be reused.

PUBLIC HEALTH REASON

When equipment is not constructed and located so that it can be cleaned easily, and is not kept in good repair, it is unlikely that it will be properly cleaned. Single-service articles, which have not been manufactured and handled in a sanitary manner, may contaminate the milk or milk product.

ITEM 12p. CLEANING AND SANITIZING OF CONTAINERS AND EQUIPMENT

The product-contact surfaces of all multi-use containers, utensils and equipment used in the transportation, processing, condensing, drying, packaging, handling, and storage of milk or milk products shall be effectively cleaned after each day's use and shall be sanitized before each use.

PUBLIC HEALTH REASON

Milk and milk products cannot be kept clean and safe, if permitted to come into contact with containers, utensils and equipment that have not been properly cleaned and sanitized.

ITEM 13p. STORAGE OF CLEANED CONTAINERS AND EQUIPMENT

After cleaning, all multi-use milk or milk product containers, utensils and equipment shall be transported and stored to assure complete drainage and shall be protected from contamination before use.

PUBLIC HEALTH REASON

If containers and equipment are not protected from contamination, the value of sanitization may be partly or entirely nullified.

ITEM 14p. STORAGE OF SINGLE-SERVICE CONTAINERS, UTENSILS AND MATERIALS

Single-service caps, cap stock, parchment paper, containers, gaskets, liners, bags and other single-service articles for use in contact with milk and milk products shall be purchased and stored in sanitary tubes, wrappings or cartons; shall be kept therein in a clean, dry place until used; and shall be handled in a sanitary manner. It is recommended that single service containers be stored above the floor.

PUBLIC HEALTH REASON

Soiled or contaminated caps, parchment paper, gaskets and single-service containers nullify the benefits of the safeguards prescribed throughout this guideline. Packing the caps in tubes, which remain unbroken until they are placed in the bottling machine, is the best method of assuring cap cleanliness.

ITEM 15p. PROTECTION FROM CONTAMINATION

Milk plant operations, equipment and facilities shall be located and conducted to prevent any contamination of milk or milk products, ingredients, containers, utensils and equipment. All milk or milk products or ingredients that have been spilled, overflowed or leaked shall be discarded. The processing or handling of products other than Grade “A” milk or milk products in the milk plant shall be performed to preclude the contamination of such Grade “A” milk and milk products. The storage, handling and use of poisonous or toxic materials shall be performed to preclude the contamination of milk and milk products, or ingredients of such milk and milk products, or the product-contact surfaces of all containers, utensils and equipment. Ensure that air under pressure that comes in contact with milk or dairy products or any product contact surface complies with sanitary standards.

PUBLIC HEALTH REASON

Because of the nature of milk and milk products and their susceptibility to contamination by bacteria, chemicals and other adulterants, every effort should be made to provide adequate protection for the milk and milk products at all times. Misuse of pesticides and other harmful chemicals can provide opportunities for contamination of the milk and milk product or equipment with which the milk or milk product comes in contact.

ITEM 16p. PASTEURIZATION AND ASEPTIC PROCESSING

ITEM 16p. PASTEURIZATION AND ASEPTIC PROCESSING

Pasteurization shall be performed as defined in Section 1, Definition EE of the PMO. Unpasteurized milk may be used in the manufacture of cheese only as allowed in the [2]Code of Federal Regulations (CFR), 21 CFR part 133, incorporated by reference and if the cheese has been cured or ripened (aged) for more than 60 days at a controlled temperature of not less than 35º F (2º C) or as specified by the US Food and Drug Administration (FDA).

Equipment used for pasteurization must be approved and tested by MDA on a routine basis each three (3) months. This testing assures that proper time, temperature and pressure are used to insure that every drop of milk processed is pasteurized. Procedures and frequencies for pasteurization tests may be referenced in both the PMO and the Manufacturing Milk Law. In order to assure that pasteurization controls for timing, temperature, and pressure cannot be altered, MDA seals these controls after testing. Whenever seals are broken, the processing plant must immediately notify MDA. MDA will test all equipment with broken seals before resealing the equipment.

All raw products must be added before pasteurization. If raw product is added to pasteurized product the resulting mixture is considered to be raw and must undergo pasteurization again. To assure that no raw product can be intentionally or accidentally added to the finished pasteurized product, there shall be no physical connection between the raw and pasteurized product lines or tanks.

All milk and milk products, i.e., milk solids, whey, nonfat dry milk, condensed milk, cream, skim milk, etc., eggs, egg products, cocoa, cocoa products, emulsifiers, stabilizers, vitamins and liquid sweeteners shall be added prior to pasteurization. Provided, ingredients which may be added after pasteurization are those flavoring ingredients and other ingredients which have been found to be safe and suitable and which include:

a. Ingredients permitted by the CFR standards of identity when considering a standardized milk or milk product;
b. Fresh fruits and vegetables added to cultured milk and milk products provided the resultant equilibrium pH level (4.6 or below when measured at 24°C (75°F)) of the finished product is reached without undue delay and is maintained during the shelf life of the product.
c. Ingredients subjected to prior heating sufficient to destroy pathogenic microorganisms;
d. Ingredients having a water activity (aw) of 0.85 or less;
e. Ingredients having a high acid content (pH level of 4.6 or below when measured at 24°C (75°F)) or high alkalinity (pH level greater than 11 when measured at 24°C (75°F));
f. Roasted nuts;
g. Dry sugars and salts;
h. Flavor extracts having high alcohol content;
i. Safe and suitable bacterial cultures and enzymes; and
j. Ingredients which have been found to be safe and suitable by FDA.

[1] 21 CFR can be reviewed at: **www.fda.gov** - search keyword “CFR”.

The terms “pasteurization”, “pasteurized” and similar terms shall mean the process of heating every particle of milk or milk product, in properly designed and operated equipment, to one of the temperatures given in the following chart and held continuously at or above that temperature for at least the corresponding specified time:

Pasteurization Times and Temperatures* / **

Fluid Milk and Milk Products	145°F (63°C) 161°F (72°C) 191°F (89°C)	30 min(vat) 15 sec(HTST) 1 sec (HTST)
Cheese milk; whey; other products with less than 10% butterfat or without added sweeteners	145°F (63°C) 161°F (72°C) 191°F (89°C)	30 min(vat) 15 sec(HTST) 1 sec(HTST)
Frozen dessert mix and Eggnog	155°F (69°C) 175°F (80°C) 180°F (83°C	30 min (vat) 25 sec(HTST) 15 sec(HTST)
Cream for butter making	165°F (74°C) 185°F (85°C)	30 min (vat) 15 sec(HTST)

*If the fat content of the milk product is ten percent (10%) or more, or a total solids of 18% or greater, or if it contains added sweeteners, the specified temperature shall be increased by 3°C (5°F).
**For additional information, see the PMO, Grade "A" Milk Law and Manufacturing Milk Law.

PUBLIC HEALTH REASON

Health officials unanimously agree upon the public health value of pasteurization. Long experience conclusively shows its value in the prevention of disease that may be transmitted through milk. Pasteurization is the only practical, commercial measure, which if properly applied to all milk, will destroy all milk borne disease organisms. Examination of lactating animals and milk handlers, while desirable and of great value, can be done only at intervals and; therefore, it is possible for pathogenic bacteria to enter the milk for varying periods before the disease condition is discovered. Disease bacteria may also enter milk accidentally from other sources, such as flies, contaminated water, utensils, etc. It has been demonstrated that the time/temperature combinations specified by the law, if applied to every particle of milk or milk product will devitalize all milk-borne pathogens. Compilations of outbreaks of milk borne disease by the USPHS/FDA, over many years, indicate that the risk of contracting disease from raw milk is approximately 50 times as great as from milk that has been “pasteurized”. A note of caution is in order. Although pasteurization destroys the organisms, it does not destroy the toxins that may be formed in milk and milk products when certain staphylococci are present, as from udder infections, and when the milk or milk product is not properly refrigerated before pasteurization. Such toxins may cause severe illness. Numerous studies and observations clearly prove that the food value of milk is not significantly impaired by pasteurization.

ITEM 17p. COOLING OF MILK AND MILK PRODUCTS

All raw milk and milk products shall be maintained at 7ºC (45ºF) or less until processed. All whey and whey products for condensing and/or drying shall be maintained at a temperature of 7ºC (45ºF) or less; or 57°C (135°F) or greater until processed, except that acid-type whey with a titratable acidity of 0.40 percent or above, or a pH of 4.6 or below, is exempted from these temperature requirements. All pasteurized milk and milk products, shall be cooled immediately prior to filling or packaging, in approved equipment, to a temperature of 7ºC (45ºF) or less. All pasteurized milk and milk products, shall be stored at a temperature of 7ºC (45ºF) or less and maintained thereat following filling or until further processed. Exceptions to these temperature requirements for cultured, acidified and condensed products can be found in the PMO.

All milk and milk product storage tanks or silos that are not cleaned daily shall be provided with an approved recording thermometer and shall be cleaned and sanitized at least every 72 hours.

Every refrigerated room or tank in which milk or milk products, whey, whey products, and condensed milk and milk products are stored, shall be equipped with an indicating thermometer accurate within 2ºF (1ºC). On delivery vehicles, the temperature of milk and milk products shall not exceed 7ºC (45ºF).

PUBLIC HEALTH REASON

When milk and milk products are not cooled within a reasonable time, after being received at the milk plant, its bacterial content will be materially increased. The same reasoning applies to cooling the milk and milk products after pasteurization, unless drying is commenced immediately after condensing.

ITEM 18p. BOTTLING, PACKAGING AND CONTAINER FILLING

Bottling, packaging and container filling of milk and milk products shall be done at the place of pasteurization in a sanitary manner by approved mechanical equipment. Single-use plastic milk containers must be manufactured in an approved facility. A list of approved single service suppliers can be found at **https://www.fda.gov/food/federalstate-food-programs/interstate-milk-shippers-list**

PUBLIC HEALTH REASON

Manual bottling, packaging and container filling are very apt to result in the exposure of the milk and milk products to contamination, which would nullify the effect of pasteurization. The transfer of milk and milk products from the place of pasteurization to another milk plant for bottling, packaging or container filling may subject the pasteurized milk or milk product to unnecessary risks of contamination.

ITEM 19p. CAPPING, CONTAINER CLOSURE AND SEALING AND DRY MILK PRODUCT STORAGE

Capping, closing or sealing of milk and milk product containers shall be performed in a sanitary manner by approved mechanical capping, closing and/or sealing equipment. The cap or closure shall be designed and applied in such a manner that the pouring lip is protected to at least its largest diameter and with regard to fluid product containers, removal cannot be made without detection. The packaging, cutting, molding, dispensing and other handling or preparation of mix or frozen desserts and their ingredients shall be done in a sanitary manner.

PUBLIC HEALTH REASON

Improper closing or sealing and hand capping exposes the milk or milk product to contamination. A cover extending over the pouring lip of the container protects it from contamination during subsequent handling, and prevents suction back into the bottle, by temperature contraction, of any contaminated liquid on the cap, including milk or milk product that has been forced out by temperature expansion and may have become contaminated. Caps or closures that are applied in such a manner that they cannot be removed without detection help to assure the consumer that the milk and milk products have not been contaminated after packaging.

ITEM 20p. PERSONNEL - CLEANLINESS

Hands shall be thoroughly washed before commencing milk plant functions and as often as may be required to remove soil and contamination. No employee shall resume work after visiting the toilet room without thoroughly washing their hands. All persons, while engaged in the handling, processing, pasteurization, storage, transportation, or packaging of milk or milk products, containers, utensils and equipment shall wear clean outer garments. All persons, while engaged in the processing of milk or milk products, shall wear adequate hair coverings and shall not use tobacco. Personnel traffic into or through the dairy plant shall be controlled to minimize potential contamination that may be carried on footwear, clothing or on the person and that may cause contamination of the plant environment or the dairy product.

PUBLIC HEALTH REASON

Clean clothing and clean hands, including clean fingernails, reduce the possibility of milk or milk products, containers, utensils and equipment becoming contaminated.

ITEM 21p. VEHICLES

All vehicles used for the transportation of pasteurized milk and milk products shall be constructed and operated so that the milk and milk products are maintained at 7ºC (45ºF) or less and are protected from contamination. Milk tank cars, milk tank trucks, and portable shipping bins shall not be used to transport or contain any substances that may be toxic or harmful to humans.

PUBLIC HEALTH REASON

Milk and milk products, as well as empty containers, should be protected against contamination at all times.

ITEM 22p. SURROUNDINGS

Milk plant surroundings shall be kept neat, clean and free from conditions which might attract or harbor flies, other insects and rodents or which otherwise constitute a nuisance. Proper disposal of wastewater and whey is essential. Contact the Michigan Department of Environmental Quality (MDEQ) for requirements of proper waste disposal at 800-662-9278 and ask for the Waste and Hazmat Division. Construct and maintain driveways and adjacent vehicular traffic areas in good repair to minimize dust and mud near the dairy plant.

PUBLIC HEALTH REASON

The surroundings of a milk plant should be kept neat and clean to prevent attracting rodents, flies and other insects, which may contaminate the milk or milk products. Insecticides and rodenticides, not approved for use in milk plants not used in accordance with label recommendations, may contaminate the milk or milk products processed by the milk plant.

Testing of Grade “A” and Manufacturing Milk and Milk Products

During any consecutive six months, at least four samples of raw milk for pasteurization, heat-treated milk products or pasteurized milk and milk products shall be collected by MDA. Normal practice is for MDA to collect samples from each facility monthly.

- Samples of milk and milk products shall be taken while in the possession of the producer, milk plant or distributor at any time prior to delivery to the store or consumer.
- Water samples, re-circulated water samples and glycol samples are collected by MDA at least once every six months.

Chemical, Bacteriological and Temperature Standards for Grade "A" Products

Grade “A” Raw Milk and Milk Products for Pasteurization, Ultra-Pasteurization or Aseptic Processing	Temperature	Cooled to 10°C (50°F) or less within four hours or less, of the commencement of the first milking, and to 7°C (45°F) or less within two hours after the completion of milking. Provided, that the blend temperature after the first milking and subsequent milkings does not exceed 10°C (50°F).
	Bacterial Limits	Individual producer milk not to exceed 100,000 per mL prior to commingling with other producer milk. Not to exceed 300,000 per mL as commingled milk prior to pasteurization.
	Drugs	No positive results on drug residue detection methods as referenced in Section 6 - Laboratory Techniques.
	Somatic Cell Count*	Individual producer milk not to exceed 750,000 per mL.
Grade “A” Pasteurized Milk and Milk Products and Bulk Shipped Heat-treated Milk Products	Temperature	Cooled to 7°C (45°F) or less and maintained thereat.
	Bacterial Limits**	20,000 per mL, or gm.***
	Coliform****	Not to exceed 10 per mL. Provided, that in the case of bulk milk transport tank shipments, shall not exceed 100 per mL.
	Phosphatase*****	Less than 350 milliunits/L for fluid products and less than 500 for other milk products by the Fluorometer or Charm ALP or equivalent.
	Drugs**	No positive results on drug residue detection methods as referenced in Section 6 - Laboratory Techniques which have been found to be acceptable for use with pasteurized and heat-treated milk and milk products.

*Goat Milk 1,000,000 per mL

** Not applicable to cultured products, eggnog and flavored milks not including chocolate milk.

*** Results of the analysis of dairy products which are weighed in order to be analyzed will be reported in # per gm. (See the current edition of the Standard Methods for the Examination of Dairy Products (SMEDP).

**** Not applicable to bulk shipped heat-treated milk products.

***** Not applicable to bulk shipped heat-treated milk products; UP products that have been thermally processed at or above 138º C (280º F) for at least two seconds to produce a product which has an extended shelf life (ESL) under refrigerated conditions; and condensed products.

Butterfat Requirements for Grade "A" Dairy Products

Product	Butterfat Range
Whole Milk	≥3.25%
2% Reduced Fat Milk	2% (1.8-2.2%)
1% Low Fat Milk	1% (.8-1.2%)
½ % Low Fat milk	.5% (.3-.7%)
Fat Free Milk	<.5%
Heavy Cream	≥36%
Light Cream	18% to < 30%
Half & Half	10% to < 18%
Eggnog	≥6%

Chemical, Physical, Bacteriological, and Temperature Standards for Manufacturing Dairy Products

Manufacturing Grade Raw Milk For Pasteurization (Not For Frozen Desserts)	Temperature	Bulk milk cooled to 45°F (7°C) or less within 2 hours after milking and maintained thereat. Provided, that the blend temperature after the first and subsequent milkings does not exceed 50°F (10°C). Can milk not to exceed 60°F (16°C) if used for cheese making; if delivered to the plant within 2 hours of milking, no temperature limit.
	Bacterial limits	Not to exceed 500,000 per ml (milk for cheese not to exceed 750,000 per ml). Not to exceed 1,000,000 per ml as commingled milk prior to pasteurization.
	Somatic cell count	Not to exceed 1,000,000 per ml.
	Drug residues	No positive results on drug residue detection methods, which have been found to be acceptable for use with raw milk
	Sediment	Not to exceed a USDA No. 3 std following procedures from std methods for the examination of milk and milk products.
	Freezing point	0.530°H maximum.
Raw Milk For Frozen Desserts	Temperature	Bulk milk cooled to 45°F (7°C) or less within 2 hours after milking and maintained thereat. Provided, that the blend temperature after the first and subsequent milkings does not exceed 50°F (10°C).
	Bacterial limits	Not to exceed 100,000 per ml for individual supplies, not to exceed 300,000 per ml commingled.
	Somatic cell count	Not to exceed 750,000 per ml.
	Drug residues	No positive results on drug residue detection methods, which have been found to be acceptable for use with raw milk.
	Sediment	Not to exceed a USDA no. 3 standard following procedures from standard methods for the examination of milk and milk products.
Butter, Whipped Butter	% butterfat	Not less than 80%.
	Temperature	Maintained at a temperature of 45°F (7°C) or less, when in storage.
	Proteolytic count	Not more than 50 per gram.
	Yeast and mold	Not more than 10 per gram.
	Coliform count	Not more than 10 per gram.
	Keeping quality	Satisfactory after 7 days at 70°F (21°C).
Pasteurized Milk, Cream, Fluid Dairy Products For Frozen Desserts	Bacterial limit	Not to exceed 20,000 per ml.
	Coliform count	Not to exceed 10 per gram. Provided, that in the case of bulk milk transport tank shipments shall not exceed 100 per ml.
	Storage temp	No higher than 45°F (7°C).
Frozen Dessert Mix	Bacterial limit	30,000 per ml.
	Coliform count	Not to exceed 10 per gram. Provided, that in the case of bulk milk transport tank shipments shall not exceed 100 per ml.
	Storage temp	No higher than 45°F (7°C). (Sterile or aseptic mix has no storage temperature requirement.)
Frozen Desserts	Bacterial limit	30,000 per ml.
	Coliform count	Not to exceed 10 per ml (20 per gram for chocolate, fruit, nuts, or other bulky flavored frozen desserts).
	Storage temp	No higher than 32°F (0°C).
Private Water Supplies For Dairy Farms And Dairy Plants; Recirculated Cooling Water (Sweet Water); Glycol For Cooling	Butterfat	Per standards listed in 21 C.F.R. 135.
	Coliform count	Less than 1.1 per 100 ml as MPN or equivalent method less than 1 per 100 ml.

Drug Residue Testing

It is important for the dairy plant to assure consumers that no antibiotics (drug residues) are found in its milk and milk products. The dairy plant must test the incoming raw milk supply for drug residues using a test approved by MDA unless the milk was prescreened for drug residues at another approved facility. The testing facility must have a laboratory area and be an approved drug residue screening site that has been evaluated by the MDA laboratory evaluation officer (LEO). After construction of the laboratory within the dairy plant and after drug residue training by the LEO, two weeks of drug residue testing records must be provided by the screening site. These records must be reviewed and accepted by the LEO in order for the screening site to be approved. The plant must receive approval for the drug residue screening site before it can start production unless pre-screened milk is received from an approved facility. Requirements for drug residue testing can be found in the PMO under Appendix N and also the Manufacturing Milk Law. Contact your MDA dairy inspector for more information.

Producer Security

Dairy plants that purchase their milk from a source (other than their own farm), must provide proof to MDA that the farmers supplying the milk will be paid. This proof is called producer security. Producer security is required even if the farm and plant have the same ownership when the dairy plant name is different from the farm name. Your MDA dairy inspector or the MDA producer security coordinator can answer questions about producer security. Questions can also be e-mailed to MDA's Dairy Section at **mda-dairyinfo@michigan.gov** or by telephone at 517-373-1060.

Bulk Milk Hauling

Each owner of a bulk milk truck must be licensed as a milk transportation company (MTC) by completing an application and paying the annual fee ($20.00), as well as paying a fee ($10.00) for bulk milk truck that they own. The permit will have a June 30 expiration/renewal date. MDA assigns a permanent tanker ID/permit number for each bulk milk tanker. All vehicles and milk tank trucks containing milk or milk products must be legibly marked with the name and address of the milk plant or hauler in possession of the contents.

The person who officially measures, samples and picks up the milk from the farm is a hauler/sampler and must be licensed by MDA. The applicant completes an application and pays a $40.00 license fee that expires after two years. In addition, the hauler/sampler must take an exam. The Bulk Milk Hauler Training Manual is available at **www.michigan.gov/mda** key words "bulk milk hauler" or from your MDA dairy inspector. The hauler/samplers are inspected at least once every two years.

Dairy plant milk receivers do not need to be individually licensed or complete a written exam. They are considered "Samplers Only" and are evaluated for correct sampling and sample handling procedures by the MDA dairy inspector initially and once every two years.

Vitamin Addition

Vitamin addition is optional for whole milk but required for low fat or reduced fat milk in order to replenish any reduction in essential nutrients caused by the removal of the fat (see 21CFR 130.10(b) and 21CFR 131.110(b)) at **www.access.gpo.gov/nara/cfr/cfr-table-search.html** under Title No. 21 – Food and Drugs. Vitamin fortification can be accomplished by the addition of vitamins at different points in the processing system, preferably after separation, including the pasteurizing vat, the HTST constant level tank, or on a continuous basis into the pipeline after standardization and prior to pasteurization in accordance with the manufacturer's recommendations. Both batch addition and addition with metering pumps can be used. The batch procedure requires accurate measurement of the volume of milk to be fortified, accurate measurement of the vitamin concentrate, and proper mixing. A batch is defined as a set volume of product (i.e. 200 gallons of fat free milk in a vat pasteurizer) to which the required amount of the vitamin is added to that specific batch. When a vitamin metering pump(s) is used with an HTST unit or an HHST unit, the pump(s) must be installed to activate only when the unit is in "forward" flow. In all cases, vitamins must be added prior to pasteurization.

Finished product samples must be collected by MDA for vitamin testing. A sample seal is applied by MDA and the samples are submitted to an approved laboratory for vitamin analysis by the dairy plant once each year. Results are submitted to MDA. Testing is to be performed in a laboratory accredited by FDA and acceptable to the Regulatory Agency. A list of approved laboratories can be found at **https://www.fda.gov/food/federalstate-food-programs/interstate-milk-shippers-list.**

Acceptable Range for Vitamins A and D

Vitamin A	2000 – 3000 I.U. per quart
Vitamin D	400 – 600 I.U. per quart

Dairy Product Labeling Requirements

Dairy processors should submit proofs of all product labels to MDA for review and approval prior to selling the product. This will help avoid printing costly labels that may not contain all required information. All bottles, containers and packages containing milk or milk products must be labeled in accordance with the applicable requirements of the Federal Food Drug and Cosmetic Act, the Nutrition Labeling and Education Act (NLEA) of 1990, the Code of Federal Regulations, or the PMO and Michigan's dairy laws. NLEA requirements do not apply if a plant annually produces 10,000 units or less of products and the products are only sold within the state. It is advisable to provide nutritional labeling because this exemption may be eliminated in the future. Any products sold interstate are required to have nutritional labeling on the product or can be printed on a card and included with the product shipment. The MSU Product Center can assist in developing labels for your products.

Sell-by date

Michigan's Grade "A" Milk Law has established the following requirements regarding sell-by dates:

- Each processor and manufacturer of milk and milk products sold in this state shall place on each container of milk and milk products a recommended last day of sale by month and date.
- The sell-by date shall be expressed by the first three letters of the month followed by the numeral designating the appropriate calendar day or by expressing the calendar month numerically followed by a numeral designating the calendar day.
- The sell-by date shall appear on that part of the container that is most likely to be displayed, presented, or shown under customary display conditions of sale. However, a cup container may have the sell-by date placed on the bottom.
- The sell-by date on the container shall be legible and shall not interfere with the legibility of other information required to be on the product.
- Processors and manufacturers of milk and milk products shall register product information on forms provided by the department. (DY-374 Last Date of Sale Product Registration Form)
- Milk and milk products shall maintain nutritional levels and shall not have a flavor change before the sell-by date.
- MDA shall periodically sample and analyze milk and milk products to determine if the flavor has changed by the sell-by date.
- The processor or manufacturer of milk or milk products which do not maintain their flavor until the sell-by date shall, upon receipt of written or verbal notice from the director, make the changes necessary to improve product quality or alter the sell-by date so as to comply with the law. The processor or manufacturer is not responsible for milk and milk products when the nutritive value loss or flavor deterioration of those products can be determined to be caused by mishandling, improper storage, or lack of refrigeration at points beyond his or her control.
- Milk and milk products shall not be offered for sale after the sell-by date unless they are advertised to the final consumer in a prominent manner as being beyond the recommended last day of sale.
- The final seller is fully responsible for the proper advertisement of milk and milk products sold beyond the sell-by date.

Allergens

There is no cure for food allergies. The only course of action for an individual with a food allergy is to strictly avoid the allergy-inducing food. To do this, a person must know whether an allergen is contained in any food they ingest. According to The Food Allergy and Anaphylaxis Network (FAAN), six to seven million Americans suffer from a food allergy. It's estimated that up to 200 people die each year from food allergy-related reactions. While it is generally believed that nearly every food or food ingredient could potentially cause an adverse reaction, the following eight foods are known to cause 90 percent of severe life-threatening reactions.

- Peanuts – including ingredients such as peanut butter, peanut flour, and hydrolyzed peanut proteins
- Tree nuts – including pecans, walnuts, hazelnuts or filberts, cashews, brazil nuts, almonds and pistachios
- Dairy – including any ingredient which contains protein from milk such as milk, cream, dry milk, and whey
- Soy – including ingredients such as soybeans, soy protein, and soy flour, but does not include soybean oil which is not considered to be an allergen
- Eggs – including egg white, egg yolk, and ingredients such as egg albumen and powdered eggs
- Fish
- Shellfish – including crustaceans, such as shrimp, crab, crayfish, lobster, and mollusks such as oysters, clams, scallops, and mussels
- Wheat

Some other substances such as color additives and sulfites can elicit reactions in sensitive individuals and represent health hazards if not properly declared on the label.

FDA has identified the following as allergen problem areas:

- Products that contain one or more allergenic ingredients, but the label does not declare the ingredient in the ingredient statement.
- Products that become contaminated with an allergenic ingredient because the firm fails to exercise adequate control procedures.
- Products that contain a flavor ingredient that has an allergenic component that is not declared on the label.

Properly labeling products and keeping known allergens out of products that are not labeled to contain them should be one of the primary goals of every food manufacturer.

Additional Information on food allergens and labeling may be found at:

U.S. Food and Drug Administration
https://www.fda.gov/food/food-allergens-and-gluten-free-guidance-documents-and-regulatory-information/food-allergen-labeling-and-consumer-protection-act-2004-questions-and-answers

Food Allergen and Anaphylaxis Network
www.foodallergy.org/

Nutritional Labeling and Education Act of 1990 (NLEA) and
https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/inspection-guides/nutritional-labeling-and-education-act-nlea-requirements-894-295

Product Recalls

A product recall is a voluntary action by a manufacturer or distributor to protect the public from products that may cause health problems. A recall may also be initiated by FDA or MDA. Your plant should be prepared with a recall plan. Though recalls are rare, it is best to be prepared ahead of time to take a proactive course when dealing with a recall situation. The Food and Dairy Division seeks to utilize procedures consistent with those of corresponding federal agencies. Recall guidance provided by these agencies can be found at the following:

- MDA Food and Dairy Division Recall Policy
  www.michigan.gov/mdafoodrecalls
- U. S. Food and Drug Administration
  https://www.fda.gov/safety/recalls-market-withdrawals-safety-alerts
- United States Department of Agriculture, Food Safety Inspection Service (FSIS)
  www.fsis.usda.gov/Fact_Sheets/FSIS_Food_Recalls/index.asp

Returned Products

Packaged dairy products that have left the control of a dairy plant but are returned or delivered to a dairy plant, commonly referred to as "returned products," shall not be re-processed into milk or milk products and shall be stored in a clearly identified area.

Enforcement

The following is a summary of the enforcement tools that may need to be used by MDA when a dairy plant is not in compliance with the law:

Reinspection

A reinspection should be conducted by an MDA dairy inspector when:

- One or more violations of items 7,11,12,16,17 or 15 are marked on the inspection sheet (please see Dairy Plant Inspection form at the back of this booklet),
- Significant drug residue testing procedures deficiencies are found, or
- Any five or more items on the inspection sheet are debited, or
- Specific violations are noted on more than five consecutive inspections.

Reinspections are conducted by MDA after the period of time allowed for corrections has elapsed. Corrections are required to be completed by the plant at the time of the reinspection. Requests for an extension of time to complete the corrections should be discussed with your MDA dairy inspector.

Warning Notice and Summary Suspension of Affected Products

- On receipt of two out of the last four sample test results that are illegal for bacteria, coliform, or cooling temperature on any given product, the MDA dairy inspector will issue a warning notice to the plant and investigate the cause of the high count or high temperature.
- Your MDA dairy inspector will discuss the correction of the violation and the consequences of three out of five illegal sample results.
- MDA will take an additional sample between three to 21 days of the warning issuance. If this sample is illegal, a summary suspension will be issued for the affected product.
- On receipt of three out of the last five sample results that are illegal on any given product, the MDA dairy inspector will issue orders to suspend production and sales of the affected product and affected product on site at the plant will be put under seizure.

  MDA will document the corrections made once the cause for the illegal test results has been determined. MDA will approve resumption of production of the affected product.

  After resumption of production, the plant will be placed on accelerated sampling for the affected product. Your MDA dairy inspector will take four samples in three weeks, at no more than two per week, establishing a new sample result history for the affected product.

Summary Suspension of the Dairy Plant License

A dairy plant license to produce dairy products may be summarily suspended for any of the following reasons:

- Improper pasteurization.
- Cross connection existing whereby direct contamination of pasteurized milk or milk products is occurring.
- Interference with MDA in the performance of its duties.
- Any other condition that creates an imminent threat to the public health, safety or welfare.

License Reinstatement

MDA will inspect all dairy plants with suspended products or licenses as soon as possible after the violations have been corrected. MDA will not reinstate the license until the violations have been corrected. If the license is not reinstated within 72 hours, an Administrative Hearing will be scheduled.

Administrative Fines

The Grade A Milk Law 2001 and Manufacturing Milk Law 2001 provide for the issuance of administrative fines. MDA may levy an administrative fine because of illegal sample results or because of certain situations that may occur on dairy farms, dairy plants, milk haulers/samplers and milk tank trucks. The fine ranges between $100 and $1,000 per violation based on the severity or frequency of the violation.

For additional information on MDA enforcement policies, contact your MDA dairy inspector.

Marketing Opportunities

"Select Michigan" Helps Grow Michigan Businesses

In addition to its regulatory responsibilities, the Michigan Department of Agriculture also has a marketing role to help Michigan producers, processors, retailers and restaurateurs expand their product sales. Through the Select Michigan Program, MDA Agricultural Development Division staff can help you promote your Michigan products, both domestically and internationally. Using the state's group purchasing power, businesses just like yours have benefited from our marketing efforts. Your business could be next! For more information about the Select Michigan Program and MDA's marketing and promotion efforts, please contact Christine Lietzau, Select Michigan Program Manager, at 517-373-9800, or **lietzauc@michigan.gov**.

Select Michigan. It's good for you, our growers, and our local economy!

Read these testimonials from our most recent promotion of Michigan peaches:
Since the Select Michigan Program began two years ago, the price of Michigan peaches for growers has gone up approximately $2 per 25 pound box. This is a $2.5 million benefit to small family farms. Three years ago growers were struggling with decisions of whether to continue growing peaches; today, growers are seriously thinking about expanding their acreage, and with expanding acreage comes more jobs for picking and packing the fruit. The Select Michigan program is a huge economic boost to small family farms in rural communities."

- Don Baiers, president, Michigan Peach Sponsors

"This program helps us stay in business. It's good for our economy and it's good for the state. Promoting 'Buy Local" is one of the most valuable aspects of this campaign. It allows more peaches to move locally so they stay here and taste better."

- Ed Czuba, Grower, Secretary- Treasurer of MPS.

"Before Select Michigan the majority of growers didn't sell direct, we didn't have communication with retail stores and many were considering bailing. Without Select Michigan we wouldn't have a fresh market. It has increased consumer confidence in homegrown since 911."

- Rodney Winkel, Grower

Additional Resources

Michigan Department of Agriculture Food and Dairy Division, Dairy Section, **www.michigan.gov/mda-dairy** or email questions to **mda-dairyinfo@michigan.gov,** or telephone at 517- 373-1060

Michigan Department of Agriculture, Agriculture Development Division
www.michigan.gov/mda/0,1607,7-125-1570—,00.html, or **http://shorterlink.com/?UI2INF**

Michigan State University Department of Food Science and Human Nutrition
Dr. John Partridge, Food Science and Human Nutrition, 2100B Anthony Hall, East Lansing, MI 48824-1225, 517-355-7713 Ext. 179

Michigan State University Product Center
www.productcenter.msu.edu, 517-432-8750
MSU Product Center, 4700 S. Hagadorn Rd, Suite 220, East Lansing, MI 48823

Equipment: New and Used*

MDE Corporation, 14379 Livernois, Detroit, MI 48238, 800-482-3393
Heritage Equipment Co., 9000 Heritage Drive, Plain City, OH 43064, 800-282-7961

Engineering and Planning*

MDE Corporation, 14379 Livernois, Detroit, MI 48238, 800-482-3393
John Miller, Seiberling Associates, Inc., 94 North High Street, Dublin, OH 43017, 614-764-2817
Heritage Equipment Co., 9000 Heritage Drive, Plain City, OH 43064, 800-282-7961

Dairy Practices Council (DPC)*

These selected guidelines may be of particular interest to an individual initiating a dairy processing business. Information regarding purchasing a copy of individual practices or a complete set of documents for plant operations, farm operations or small ruminants is shown below:

DPC Guideline Number:

8	Good Manufacturing Practices For Dairy Processing Plants
10	Maintaining & Testing Fluid Milk Shelf-Life
13	Environmental Air Control and Quality for Dairy Food Plants
16	Handling Dairy Products from Processing To Consumption
21	Raw Milk Quality Tests
23	Preventing Rancid Flavors in Milk
24	Troubleshooting High Bacteria Counts of Raw Milk
29	Cleaning & Sanitizing in Fluid Milk Processing Plants
38	Preventing Off-Flavors in Milk
56	Dairy Product Safety (Pathogenic Bacteria) for Fluid Milk and Frozen Dessert Plants
57	Dairy Plant Sanitation
80	Food Allergen Awareness In Dairy Plant Operations
90	On-Farm and Small-Scale Dairy Products Processing
100	Food Safety in Farmstead Cheese making

DPC, 51 E. Front Street, Suite 2, Keyport, NJ 07735, telephone (732) 203-1947, **http://www.dairypc.org** or email DPC **dairypc@dairypc.org**.
*This is not necessarily a complete list and is not intended to be an endorsement.

DY-366
Rev. 06/07

Michigan Department Of Agriculture

Food And Dairy Division
Dairy Section
P.O. BOX 30017
Lansing, MI 48909

Dairy Plant Advisory Checklist

1) What product(s) will be made?

- ❑ Containers
- ❑ Cheese
- ❑ Butter
- ❑ Powdered Ingredients
- ❑ Ice Cream / Novelties / Mixes
- ❑ Yogurt / Cottage Cheese /Sour Cream
- ❑ Whipping Cream
- ❑ Bottled Milk
- ❑ Condensed Products
- ❑ Infant Formula
- ❑ Product Registration Form (DY 374) reviewed and submitted for Grade "A" products
- ❑ Review sampling requirements for raw products, finished products and water supply.

2) What classification?

- ❑ Single Service
- ❑ Manufacturing
- ❑ Grade "A"
- ❑ Product shipments across state lines (A Grade "A" Survey of the facility will be required.)

3) Raw Milk/Milk Products Supply

- ❑ What raw materials will be received?
- ❑ What is the source of the raw materials?
- ❑ Will producer security be required? Contact the Lansing office.
- ❑ Where will Appendix N drug residue screening of raw milk supply take place?
- ❑ If drug residue screening is completed off-site, proper documentation is required.
- ❑ **Note: Penzyme Milk Test and the Charm SL5 are the only common drug residue tests approved for testing comingled raw goat (caprine) milk.**
- ❑ Will milk hauler licensing and/or milk sampler evaluation be necessary?
- ❑ Will a bulk tanker permit decal and inspection be necessary?
- ❑ How will the raw materials be processed?

4) Construction of the Facility

- ❑ Is a new facility to be constructed?
- ❑ Is an existing facility going to be modified?

- Building a new facility within an existing building?
- How far will the processing facility be from the farm environment (milkhouse or barn)?
- Review detailed floor plans including the placement of equipment, milk receiving, lab area, toilet facilities, HVAC, break room area, dry storage, finished product cooler etc. Pressurized air in production rooms. Consider what ventilation will be needed during all seasons, 95 percent filtered air.
- Discuss traffic flow through the plant, footbaths, raw/pasteurized areas.
- Utilities source – Steam, water, electricity and proper voltage requirements for the equipment.
- Walls – consider concrete block or poured concrete 1-2 feet above the floor to avoid damage to the wall from washing etc. Consider a vapor barrier on the inside wall between the insulation and inside wall covering.
- Floor space – Allow adequate room for working, maintenance and future expansion, addition of equipment etc.
- Consider electrical plug ins to be water resistant and high enough on the wall to avoid excess moisture.
- Take photos if necessary.

5) Water Supply

- Private Well
- Municipal Water Supply
- Chill Water /Glycol Systems
- Boilers, additives and fresh water add line?
- Are there any submerged inlets or cross-connections?
- Backflow Preventers / Vacuum Breakers

6) How is Wastewater Handled?

- Do they need a ground water discharge permit?
- Septic System
- Lagoon
- Municipal Sewer System
- Toilet facility waste must discharge into a septic system.

7) What Type of Equipment will be used?

- Pasteurizers – Discuss pasteurization requirements and testing frequencies
- Sterilizers
- Fillers
- Raw Silos / Pasteurized Tanks
- Freezers
- Cheese Vats
- Dryers
- Evaporators
- Separators
- Homogenizers
- Blow Mold machines

- Pumps, proper speed and know the manufacturer, serial numbers, etc. for future parts orders.
- Submit complete piping and equipment plans for review
- Encourage vertical drops for piping and utilities when possible.
- Take photos if necessary.

8) Packaging and Storage

- What is the source of packaging materials?
- What kind of labels? Contact the labeling specialist in the Lansing office.
- Any products sold interstate or internationally will need to meet the full nutritional labeling requirements. This could be in the form of a card sent with the product or it could be printed directly on the label.
- Do products need to be refrigerated?
- Are there additional warehouses at another location?
- Discuss shelf life program for Grade “A” products.

9) How will the Product(s) be Distributed?

- Existing distribution vs. new
- Refrigeration of dairy products, delivery trucks

Discuss the MDA Enforcement Policy

A round table discussion or conference call with the following resources and the dairy plant owners can be helpful in maintaining good communication and avoiding misunderstandings during the process from planning to production.

- Pasteurization Specialist
- Survey Officer
- Supervisor

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Distribution:
White – Office
Canary – Plant
Pink – Inspector

MICHIGAN DEPARTMENT OF AGRICULTURE
FOOD & DAIRY DIVISION
DAIRY SECTION
P.O. BOX 30017
LANSING, MI 48909

☐ Fluid Milk
☐ Frozen Dessert
☐ Condensed/Dry
☐ Cheese
☐ Wash Station
☐ Receiving Stn.
☐ Transfer Stn.
☐ Milk Distributor

☐ ROUTINE
☐ REINSPECTION

DAIRY PLANT INSPECTION

(In accordance with Act 266, PA 2001 or Act 267, PA 2001)

Date

Plant License No.	Name	Pounds of milk or milk products received per day	☐ Grade A
Address		Greatest pounds of milk receipts in 30 days	☐ Mfg Grade

Inspector	Inspector No.
REINSPECTION REQUIRED ☐	Copy Received By: Title:

Instructions for correcting items in violation are listed below. (See the reverse of this page for the details of the requirements) **All items must be corrected by the next inspection.**

NOTICE: Failure to correct items _____ by _____ may result in suspension of your permit to sell milk and/or court action and/or administrative action.

You may contact the MDA with questions concerning the instructions for the correction of items listed by calling: _____. Requests for the time extensions must be made to your area inspector by calling _____.

ITEM NO.	

Items below identify any of the violations that may have been written on the reverse side of this inspection sheet.

1.Floors:
Smooth; impervious; no pools; good repair; trapped drains ..... (a) ____
2.Walls and Ceilings:
Smooth; washable; light-colored; good repair ..... (a) ____
3.Doors and Windows:
All outer openings effectively protected against entry of flies and rodents ..... (a) ____
Outer doors self-closing; screen doors open outward ..... (b) ____
4.Lighting and Ventilation:
Adequate light in all rooms ..... (a) ____
Well ventilated to preclude odors and condensation; filtered air with pressure systems ..... (b) ____
5.Separate Rooms: Separate rooms as required; adequate size ..... (a) ____
No direct opening to barn or living quarters ..... (b) ____
Storage tanks properly vented ..... (c) ____
6.Toilet Facilities:
Complies with local ordinance ..... (a) ____
No direct opening to processing rooms; self closing doors ..... (b) ____
Clean; well-lighted and ventilated; proper facilities ..... (c) ____
Sewage and other liquid wastes disposed of in sanitary manner ..... (d) ____
7.Water Supply: Constructed and operated in accordance with Ordinance ..... (a) ____
No direct or indirect connection between safe and unsafe water ..... (b) ____
Condensing water and vacuum water in compliance with Ordinance requirements ..... (c) ____
Complies with bacteriological standards ..... (d) ____
Reclaimed water complies with Ordinance ..... (e) ____
8. Hand-washing Facilities:
Located and equipped as required; clean and in good repair; improper facilities not used ..... (a) ____
9. Milk Plant Cleanliness:
Neat; clean; no evidence of insects or rodents; trash properly handled ..... (a) ____
No unnecessary equipment ..... (b) ____
No excessive product dust ..... (c) ____
10. Sanitary Piping: Smooth; impervious, corrosion-resistant, non-toxic, easily cleaned materials; good repair; accessible for inspection ..... (a) ____
Clean-in-place lines meet Ordinance specifications ..... (b) ____
Pasteurized products conducted in sanitary piping,except as permitted by Ordinance ..... (c) ____
11. Construction and Repair of Containers and Equipment:
Smooth; impervious, corrosion resistant, non-toxic, easily cleaned materials; good repair; accessible for inspection ..... (a) ____
Self draining; strainers and sifters of approved design ..... (b) ____
Approved single-service articles, not reused ..... (c) ____
12. Cleaning and Sanitizing of Containers and Equipment:
Containers, utensils, and equipment, including ingredient and flavoring feeding equipment, effectively cleaned ..... (a) ____
Mechanical cleaning requirements of Ordinance in compliance; records complete ..... (b) ____
Approved sanitization process applied prior to use of product-contact surfaces ..... (c) ____
Required efficiency tests in compliance ..... (d) ____
Multi-use plastic containers in compliance ..... (e) ____
Aseptic system sterilized ..... (f) ____
13. Storage of Cleaned Containers and Equipment:
Stored to assure drainage and protected from contamination ..... (a) ____
14. Storage of Single Service Articles:
Received, stored and handled in a sanitary manner, paperboard containers not reused except as permitted by Ordinance ..... (a) ____
15a. Protection from Contamination:
Operations conducted and located so as to preclude contamination of milk, milk products, ingredients, containers, equipment and utensils ..... (a) ____
Overflow, spilled and leaked products or ingredients discarded ..... (b) ____
Air and steam used to process products in compliance with Ordinance ..... (c) ____
Approved pesticides, safely used ..... (d) ____
15b. Cross Connections:
No direct connections between pasteurized and raw milk or milk products ..... (a) ____
No direct connections between milk or milk products and cleaning systems and/or cleaning solutions ..... (b) ____
16a. Pasteurization – Batch:
(1) Indicating and Recording Thermometers:
Comply with Ordinance specifications ..... (a) ____
(2) Time and Temperature Controls:
Adequate agitation throughout holding; agitator sufficiently submerged ..... (a) ____
Each pasteurizer equipped with indicating and recording thermometer; bulbs submerged ..... (b) ____
Recording thermometer reads no higher than indicating thermometer ..... (c) ____
Product held minimum pasteurization temperature continuously for 30 minutes, plus filling time if product preheated before entering the vat, plus emptying time if cooling is begun after opening outlet ..... (d) ____
No product added after holding begun ..... (e) ____
Airspace above product maintained at not less than 5.0ºF, higher than minimum required pasteurization temperature during holding ..... (f) ____
Approved airspace thermometer; bulb not less than 1 inch above product level ..... (g) ____
Inlet and outlet valves and connections in compliance with Ordinance ..... (h) ____
16b. Pasteurization – High Temperature, ... Short – Time Continuous Flow:
(1)Indicating and Recording Thermometers:
Comply with Ordinance specifications ..... (a) ____
(2) Time and Temperature Controls:
Flow diversion device complies with Ordinance requirements ..... (a) ____
Recorder controller complies with Ordinance requirements ..... (b) ____
Holding tube complies with Ordinance requirements ..... (c) ____
Flow promoting devices comply with Ordinance requirements ..... (d) ____
(3) Adulteration Controls: Satisfactory means to prevent adulteration with added water ..... (a) ____
16c. Aseptic Processing:
(1) Indicating and Recording Thermometers:
Comply with Ordinance specifications ..... (a) ____
(2) Time and Temperature Controls:
Flow diversion device complies with Ordinance requirements ..... (a) ____
Recorder controller complies with Ordinance requirements ..... (b) ____
Holding tube complies with Ordinance requirements ..... (c) ____
Flow promoting devices comply with Ordinance requirements ..... (d) ____
(3) Adulteration Controls: Satisfactory means to prevent adulteration with added water ..... (a) ____
16d. Regenerative Heating:
Pasteurized or aseptic product in regenerator automatically under greater pressure than raw production generator at all times ..... (a) ____
Accurate pressure gauges installed as required; booster pump properly identified and installed ..... (b) ____
Regenerator pressures meet Ordinance requirements ..... (c) ____
16e. Temperature Recording Charts:
Batch pasteurizer charts comply with applicable Ordinance requirements ..... (a) ____
HTST pasteurizer charts comply with applicable Ordinance requirements ..... (b) ____
Aseptic charts comply with applicable Ordinance requirements ..... (c) ____
17. Cooling of Milk and Milk Products:
Raw milk maintained at 45ºF or less until processed ..... (a) ____
Pasteurized milk and milk products, except those to be cultured or crystalized, cooled immediately to 45ºF or less in approved equipment; all milk and milk products stored thereat until delivered or processed into a manufactured product ..... (b) ____
Approved thermometer properly located in all refrigeration rooms and storage tanks ..... (c) ____
Recirculated cooling water from safe source and properly protected; complies with bacteriological standards ..... (d) ____
Frozen dessert mix and re-run maintained 45°F or less, handled and stored in a sanitary manner ..... (e) ____
Dry products cooled to 110°F or less prior to packaging ..... (f) ____
18a. Bottling and Packaging:
Performed in plant where contents finally pasteurized ..... (a) ____
Performed in sanitary manner by approved mechanical equipment ..... (b) ____
Aseptic filling in compliance ..... (c) ____
Containers properly labeled ..... (d) ____
18b. Dry Products Container Filling:
Dry products packaged in new containers ..... (a) ____
Performed in sanitary manner by mechanical equipment ..... (b) ____
Transported in sealed containers for further processing and/or packaging ..... (c) ____
Stored in a sanitary manner ..... (d) ____
Containers properly labeled ..... (e) ____
18c. Frozen Desserts Packaging:
Containers handled in a sanitary manner ..... (a) ____
Containers filled in a sanitary manner ..... (b) ____
Flavorings and bulky ingredients properly stored, handled and added to mix ..... (c) ____
Transported bulk mix in over 5 gal. container is re-pasteurized at freezing site ..... (d) ____
Re-run used in a manner to preclude allergen contamination ..... (e) ____
Freezer air supply clean and properly filtered ..... (f) ____
Containers properly labeled. ..... (g) ____
19a. Capping:
Capping and/or closing performed in sanitary manner by approved mechanical equipment ..... (a) ____
Imperfectly capped/closed products properly handled ..... (b) ____
Caps and/or closures comply with Ordinance ..... (c) ____
19b. Dry Product Container Closure, Sealing and Storage:
Closing and sealing performed in a sanitary manner by mechanical equipment ..... (a) ____
Imperfectly closed products properly handled ..... (b) ____
Sanitary closure ..... (c) ____
19c. Frozen Dessert Mix and Product:
Covers or lids applied in a sanitary manner ..... (a) ____
Frozen products stored at proper temperature ..... (b) ____
20. Personnel Cleanliness:
Hands washed clean before performing plant function; rewashed when contaminated ..... (a) ____
Clean outer garments and head covering worn ..... (b) ____
No use of tobacco in processing areas ..... (c) ____
21. Vehicles:
Vehicles clean; constructed to protect milk ..... (a) ____
No contaminating substances transported ..... (b) ____
22. Surroundings:
Neat and clean; free of pooled water, harborages, and breeding areas ..... (a) ____

1. A receiving station shall comply with Items 1 to 15, inclusive, and 17, 20, and 22. Separation requirements of item 5 do not apply.
2. A transfer station shall comply with Items 1 to 15, inclusive 17, 20, 22 and as climatic and operating conditions require, applicable provisions of Items 2 and 3. In every case, overhead protection shall be required.
3. Wash facilities for the cleaning and sanitizing of bulk transport tanks shall comply with the same requirements for transfer stations.
4. Shaded areas pertain only to dry and condensed products or frozen desserts, as applicable. Distributors comply with items 1- 6, 8, 9, 17, 21 and 22 as applicable.

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