



FOOD TECHNOLOGY FACT SHEET

Adding Value to OKLAHOMA

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Got Compliance?

Dairy Products Marketing Regulations for Oklahoma

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The Oklahoma Cooperative Extension Service Bringing the University to You!

The Cooperative Extension Service is the largest, most successful informal educational organization in the world. It is a nationwide system funded and guided by a partnership of federal, state, and local governments that delivers information to help people help themselves through the land-grant university system.

Extension carries out programs in the broad categories of agriculture, natural resources and environment; home economics; 4-H and other youth; and community resource development. Extension staff members live and work among the people they serve to help stimulate and educate Americans to plan ahead and cope with their problems.

Some characteristics of Cooperative Extension are:

- The federal, state, and local governments cooperatively share in its financial support and program direction.
- It is administered by the land-grant university as designated by the state legislature through an Extension director.
- Extension programs are nonpolitical, objective, and based on factual information.

- It provides practical, problem-oriented education for people of all ages. It is designated to take the knowledge of the university to those persons who do not or cannot participate in the formal classroom instruction of the university.
- It utilizes research from university, government, and other sources to help people make their own decisions.
- More than a million volunteers help multiply the impact of the Extension professional staff.
- It dispenses no funds to the public.
- It is not a regulatory agency, but it does inform people of regulations and of their options in meeting them.
- Local programs are developed and carried out in full recognition of national problems and goals.
- The Extension staff educates people through personal contacts, meetings, demonstrations, and the mass media.
- Extension has the built-in flexibility to adjust its programs and subject matter to meet new needs. Activities shift from year to year as citizen groups and Extension workers close to the problems advise changes.

Introduction

Dairy products such as fluid milk, butter and cheese are important staple food items in a majority of U.S. households. These products serve as valuable sources of protein, vitamins, minerals and energy.

The growing demand for local foods has stirred a renewed interest in small-scale dairy production in Oklahoma. Consumer emphasis is not just on the source or location of the dairy farm or processing plant, but also on the livestock treatment and land conservation practices used by dairy farmers (Wolf, Tonsor and Olynk 2011). Oklahoma farmers, seeing a niche marketing opportunity, have asked the Oklahoma Department of Agriculture, Food and Forestry (ODAFF) for assistance in evaluating its dairy marketing opportunities. Additionally, farmers contact the Robert M. Kerr Food & Agricultural Products Center (FAPC) at Oklahoma State University for assistance with dairy products processing and food safety training.

This fact sheet was developed by ODAFF and FAPC personnel to help producers better understand the regulatory requirements for handling and processing dairy products in Oklahoma.

What constitutes "milk" and "dairy products"?

Milk is often assumed to mean cow's milk, but the definition of milk found in the Grade "A" Pasteurized Milk Ordinance (PMO) is not that restrictive. Specifically, the PMO defines "Hooved Mammal's Milk" as the normal lacteal secretion practically free of colos-

trum, obtained by the complete milking of one or more healthy hooved mammals. Hooved mammals in the PMO include, but are not limited to:

- Bovidae (cattle, water buffalo, sheep, goats, yaks, etc.)
- Camelidae (llamas, alpacas, camels, etc.)
- Cervidae (deer, reindeer, moose, etc.)
- Equidae (horses, donkeys, etc.)

The PMO provides additional guidelines for specific-types of milk. For example, goat milk adheres to the "hooved mammal's milk" definition, but the PMO also states that "goat milk sold in retail packages shall contain not less than 2.5 percent milk fat and not less than 7.5 percent milk solids not fat." The PMO also describes the sanitary conditions to be met by goat milk producers.

Dairy products – much like fluid milk – also can be broadly defined. Dairy products include, but are not limited to, the following:

- Butter
- Cheese (natural or processed, hard or soft)
- Dry milk (whole and nonfat)
- Dry buttermilk
- Dry whey
- Evaporated milk (whole or skim)
- Condensed milk (whole or skim, plain or sweetened)
- Yogurt
- Sour cream
- Ice cream
- Other products, including pre-packaged, milk-based drinks

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The terms and requirements for fluid milk and milk for processing likewise differ. Fluid milk from a cow intended to be bottled and sold for drinking must meet Grade A standards. Milk to be used for processing dairy products does not have to meet Grade A standards, but provisions still exist for acceptable quality limits. These differences will be explained in greater detail later in this fact sheet.

In Oklahoma, dairy product grades and standards follow those established by federal law. Oversight of state dairy farm inspection and food safety for dairy products, as established by the Oklahoma Dairy Law, falls under the domain of the ODAFF Food Safety Division, Dairy Section. Specific food safety requirements for Oklahoma milk and milk product producers are located in Title 35 (ODAFF), Chapter 37 (Food Safety), Subchapter 13 (Milk and Milk Products), otherwise known as the Oklahoma Milk and Milk Products Act.

What is raw milk and can I sell it in Oklahoma?

Growing interest in the consumption of unprocessed foods has encouraged the demand for raw milk in the United States. According to the Food and Drug Administration (FDA), the term “raw milk” indicates milk that has not been pasteurized to kill harmful bacteria such as *Salmonella*, *E. coli* and *Listeria*. These bacteria and other diseases associated with unpasteurized milk (e.g. tuberculosis, diphtheria) are especially dangerous to older adults, pregnant women and children, resulting in illness and in some cases death (FDA, 2012). Conversely, pasteurized milk has been heated to a specific temperature for a specific amount of time to kill pathogenic organisms.

Several myths have been circulated regarding raw milk and pasteurized milk. FDA has produced a publication that addresses these myths and provides facts about both raw and pasteurized milk (FDA, 2012). Some of the facts are:

- The process of pasteurization does not cause allergic reactions to milk. Allergic reactions are due to milk proteins found in both raw and pasteurized milk.
- Both FDA and the Centers for Disease Control (CDC) state that raw and pasteurized milk have virtually identical nutritional values.
- Pasteurized milk still contains low levels of non-pathogenic bacteria, so refrigeration is still necessary to prevent spoilage.
- Hard cheeses such as cheddar and parmesan made from raw milk do not typically have pathogenic

bacteria because the combination of salt, aging, and acidity in the cheese-making process hinders the presence of these organisms. However, soft cheeses (e.g. brie and some Mexican-style soft cheeses) and yogurt made from raw milk may still contain pathogens.

Because of potential health risks associated with raw milk, the retail sale of raw milk is illegal in most states, including Oklahoma. However, raw milk can be sold through incidental sales in Oklahoma. Incidental sales refers to on-farm sales of raw milk directly to consumers. According to the Oklahoma Milk and Milk Products Act:

Only Grade A pasteurized milk and milk products Grade A raw milk shall be sold to the final consumer; provided, however, only Grade A pasteurized milk shall be sold through restaurants, soda fountains, grocery stores or similar establishments, including school lunch rooms.

For more information about incidental sales limitations, contact ODAFF state inspectors. Permits are not required to make incidental sales of raw cows’ milk at the farm, but farmers making more than a defined quantity of incidental sales must have a Milk Plant Permit (see Figure 1). Additionally, farmers cannot publicly advertise the sale of raw cows’ milk.

Raw goat milk regulations differ from those for raw cows’ milk. Effective Nov. 1, 2014, raw goat milk can be sold up to 100 gallons per month at the farm without a permit in Oklahoma. Unlike raw cows’ milk, farmers making incidental sales of raw goat milk at the farm are legally allowed to advertise.

It is important to note that incidental sales exemptions only apply to raw milk, not dairy products manufactured from raw milk. Even a raw milk permit is only good for raw milk sales, not for any other raw dairy products. Producers wanting to sell dairy products manufactured from raw milk must obtain a Milk Plant Permit (Figure 1), which is described later in this fact sheet.

Can I Transport Raw Milk from My Farm to Customers?

Only licensed and inspected entities can haul, process or distribute raw milk in Oklahoma. According to the Oklahoma Milk and Milk Products Act:

No person shall produce, haul, process or distribute Grade A raw milk for pasteurization or milk and milk products, or hold oneself out as a milk producer, transporter, processor, or distributor or represent a dairy farm, bulk milk hauler/sampler, milk tank truck driver, milk transportation company, milk tank truck distribution center, or milk

OKLAHOMA DEPARTMENT OF AGRICULTURE, FOOD, AND FORESTRY
 DAIRY SERVICES
 P.O. BOX 528804
 OKLAHOMA CITY, OK 73152-8804
 405-522-6130

In compliance with S.B. 1424 passed by the Second Session of the Forty-Seventh Legislature, I (or we) herewith submit this MONTHLY report covering the amount of milk and cream received and/or processed or offered for sale in Oklahoma.

THIS REPORT IS FOR THE MONTH OF () 2011

1. Total pounds of milk () processed in all milk products @ 1 cent per 100 pounds: \$ _____
2. Total pounds of raw milk () marketed @ 1 cent per 100 pounds: \$ _____

TOTAL DUE: \$ _____

If you are a processor only, that does not buy raw milk directly from your own producers, then complete 1st portion of this report.

If you are a marketing agent such as a Co-op then complete the 2nd portion of this report.

If you are a processor that purchases part of your raw milk from another marketing agent and part of your raw milk from your own producers then complete both 1 and 2 using a volume in the 2nd part that represents the milk purchased from your own producers.

RETURN WITH PAYMENT BY THE 15TH OF EACH MONTH. A copy of this form must accompany payment. No cash accepted. Make check or money order payable to: Oklahoma Department of Agriculture and mail to the attention of ACCOUNT RECEIVABLE/RECEIPTS.

CO: _____ COMPLETED BY: _____

DATE OF REPORT: _____

OFFICE USE ONLY	
CHECK OR MONEY ORDER NUMBER	
AMOUNT PAID	
DATE	
RECEIVED BY	
RECEIPT NUMBER	

Figure 2: ODAFF Monthly Dairy Inspection Report/Invoice. (www.oda.state.ok.us/food/dairyinvoice.pdf)



State of Oklahoma
Department of Agriculture, Food, and Forestry

Mary Fallin
Governor

Jim Reese
Secretary of Agriculture

DAIRY SERVICES
MILK AND MILK PRODUCTS PERMIT APPLICATION

Company Name: _____
Owner or Operator: _____
Address: _____
Daytime Phone: _____

HEREBY MAKES APPLICATION FOR PERMIT TO OPERATE:

- _____ 1. Dairy Farm (Grade A _____) (Manufacturing Grade _____)
a. Located in _____ County
b. Finding location: _____
c. Producer Association or Company purchasing Milk: _____
- _____ 2. Milk Hauler : (Route _____) (Transport _____) _____ 5. Receiving or Transfer Station
- _____ 3. Milk Plant (Grade A _____) (Manufacturing Grade _____) _____ 6. Milk Distribution Center
- _____ 4. Single Service Manufacturer _____ 7. Transportation Company

Please initial one of the following:

- _____ I hereby grant to _____ the power and authority to receive the notice of suspension of permit.
- _____ I designate my indicated Producer Association or milk purchasing company as such agent.
- _____ I do not so designate. Phone: _____
Address: _____

I hereby grant permission to any authorized representative of the Commissioner of the Oklahoma Department of Agriculture, Food, and Forestry to enter the above described premises, at any reasonable hour, for the purpose of determining compliance with the Oklahoma Milk and Milk Products Act. I further understand that my permit will be immediately suspended if I refuse to allow such an inspection.

Signature of Applicant Date

FOR OFFICE USE ONLY
Permit Number:
Patron Number:
Date Issued:

2800 N. Lincoln Blvd., Oklahoma City, OK 73105 (405) 521-3864
www.oda.state.ok.us

or milk products as "Grade A" unless that person possesses an appropriate and valid permit for the particular premises or facilities concerned.

What are the requirements for milk and dairy product grades?

The rating term Grade A is often referred to as "fluid milk" grade, while "Grade B" is often referred to as "manufacture grade" milk. Pasteurized Grade A milk is approved for sale as fluid milk to the consumer through retail and foodservice establishments and also is used in dairy products processing. Conversely, Grade B milk is approved only for use in processing dairy products such as butter, cheese and other manufactured items.

Grade A refers to the wholesomeness or safety of milk, rather than a level of quality. By federal standards, all activities associated with the production, pasteurization, and handling of Grade A milk must take place under strict sanitary controls. Enforcement of these sanitary controls is the responsibility of state and local milk sanitation officials.

Requirements for milk and milk products vary by type, and while the Grade A rating does not denote the level of quality, there are strict requirements for milk for manufacturing purposes. The PMO outlines the requirements as:

- Grade A Raw Milk and Milk Products for Pasteurization, Ultra-pasteurization, Aseptic Processing or Manufacturing.
 - o 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).
 - o Bacterial Limits:
 - Grade A:
 - Individual distributed raw milk not to exceed 35,000 per mL. 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.
 - Manufacture Grade:
 - Individual producer milk for

manufacturing not to exceed 500,000 per mL prior to commingling with other producer milk. Not to exceed 1,000,000 per mL as commingled milk prior to manufacturing.

- o Drugs:
 - No positive results on drug residue detection, using methods approved by FDA.
- o Somatic Cell Count:
 - Grade A:
 - Individual producer milk not to exceed 750,000 per mL.
 - 1,500,000 per mL for goat milk.
 - Manufacture Grade:
 - Individual producer milk not to exceed 750,000 per mL.
- Grade A Pasteurized Milk and/or Milk Products
 - o Temperature:
 - Cooled to 7°C (45°F) or less and maintained thereat.
 - o Bacterial Limits:
 - Not to exceed 20,000 per mL, or gm.
 - o Coliform:
 - Not to exceed 10 per mL. Provided, that in the case of bulk milk transport tank shipments, shall not exceed 100 per mL.
 - o Phosphatase:
 - Less than 350 milliunits/L for fluid products and other milk products by approved electronic phosphatase procedures.
 - o 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 Milk and/or Milk Products.
- Grade A Ultra-Pasteurized (UP) Milk and/or Milk Products
 - o Temperature:
 - Cooled to 7°C (45°F) or less and maintained thereat.
 - o Bacterial Limits:
 - Not to exceed 20,000 per mL, or gm.

Figure 1: ODAFF Milk and Milk Products Permit Application. (www.oda.state.ok.us/food/dsmilkpermit.pdf)

- o Coliform:
 - Not to exceed 10 per mL. Provided, in the case of bulk milk transport tank shipments, shall not exceed 100 per mL/.
- o 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 Ultra-Pasteurized Milk and/or Milk Products.
- Grade A Pasteurized Concentrated (Condensed) Milk and/or Milk Products
 - o Temperature:
 - Cooled 7°C (45°F) or less and maintained thereat unless drying is commenced immediately after condensing.
 - o Coliform:
 - Not to exceed 10 per gram. Provided, in the case of bulk milk transport tank shipments shall not exceed 100 per gram.
- Grade A Nonfat Dry Milk and Dry Milk and/or Milk Products
 - o Bacterial Estimate:
 - Not to exceed 10,000 per gram
 - o Coliform:
 - Not to exceed 10 per gram
- Grade A Whey for Condensing and/or Drying
 - o Temperature:
 - Maintained at a temperature of 7°C (45 °F) or less, or 57°C (135°F) or greater, except for acid-type whey with a titratable acidity of 0.04 percent or above, or a pH of 4.6 or below.
- Grade A Pasteurized Condensed Whey and/or Whey Products
 - o Temperature:
 - Cooled to 10°C (50°F) or less during crystallization within 72 hours of condensing.
 - o Coliform Limit:
 - Not to exceed 10 per gram
- Grade A Dry Whey, Grade A Dry Whey Products, Grade A Dry Buttermilk, and Grade A Dry Buttermilk Products

- o Coliform Limit:
 - Not to exceed 10 per gram.
- Dairy products also have grades. In fact, various dairy products also have different pasteurization requirements to meet those grades. As examples:
- Butter: pasteurized at or above 165°F for at least 30 minutes; or by high-temperature short-time (HTST) method at a minimum temperature of 185°F for at least 15 seconds; or by any other equivalent time and temperature combination.
 - Cheese: pasteurized prior to condensing at or above 161°F for 15 seconds. If the milk is held more than 2 hours between heat treatment and setting, it must be cooled to 45°F or lower until time of setting.
 - Nonfat dry milk: milk used to manufacture of non-fat dry milk must be heated prior to condensing to at least 161°F for at least 15 seconds or by other method to achieve equivalent bacterial destruction.
 - Plastic or frozen cream: pasteurized at a minimum temperature of 170°F for at least 30 minutes; or pasteurized by HTST method at a minimum temperature of 190°F for at least 15 seconds; or by another approved method.

What permits do I need to start an Oklahoma dairy business?

The type of dairy activity determines the necessary permits. ODAFF has prepared a single application form that addresses permitting for most dairy-related activities (Figure 1). These permits are non-transferable among people or places. With exceptions for hauler/sampler and truck/transportation permits, the permits do not expire and are not renewed, although they may be replaced if the issued copy deteriorates or if the status of the operation changes. The various permits are as follows:

- Dairy Farm Permit (Grade A and Manufacture Grade) – This permit is issued to dairy farms that produce Grade A or manufacture grade milk. This permit is issued to the dairy farm owner after the ODAFF inspector confirms the facility is built and can operate according to standards required by the agency. There is no expiration date or renewal requirement.
- Milk Plant Permit (Grade A and Manufacture Grade) – This permit is issued to dairy processing facilities that process Grade A and/or manufacture grade milk. The permit is issued to the owner/operator after the ODAFF inspector confirms the facility is built and can operate according to standards required by the agency. There is no

- Receiving/Transfer Station Permit – This permit is issued to facilities where raw milk is received stored or cooled for further transporting or to facilities that transfer milk or milk products from one milk tank truck to another. The permit is issued to the owner/operator after the ODAFF inspector confirms that the facility is built and can operate according to standards required by the agency. There is no expiration date or renewal requirement.
- Milk Hauler/Sampler Permit - This permit is issued to individuals who sample and/or haul milk and milk products. The permit is issued after the hauler/sampler passes an inspection of procedure and written test required by ODAFF. This permit expires two years from the date of issuance and is renewed after a request for re-inspection of sampling/collection procedure.
- Milk Tank Truck/Transportation Company - This permit is issued to transportation companies who transport milk and milk products. Individual milk transport tankers receive a permit via an inspection sticker, which is affixed to the tanker after the ODAFF conducted inspection confirms compliance. Individual milk transport tankers receive a permit (sticker) after compliant inspection. Transportation company permits do not expire and are not renewed. Individual tankers inspection stickers expire one year from date of inspection including inspection month.

Additional permits or documentation are required for larger dairy businesses importing milk from other states for the purposes of fluid milk bottling, dairy products processing or distribution. Businesses wanting to import milk or milk products must complete and submit the “Application for Permit to Import Milk and Milk Products” form, available for download at www.oda.state.ok.us/food/dsmilkimport.pdf.

How will my dairy operation be inspected, and what will it cost?

The Dairy Section of the ODAFF Food Safety Division inspects Oklahoma dairies and dairy processors to ensure these entities are following state and federal dairy regulations. To cover the costs of inspections, dairy producers and processors are charged an inspection fee. For dairy producers or marketing agents (e.g. dairy co-operatives), this fee is equal to one cent per 100 gallons of raw milk marketed by the entity. For processors, this

fee is equal to one cent per 100 gallons of milk or cream used in dairy products processing.

Both marketers and processors are required to complete and submit a form (Figure 2) to ODAFF indicating the amount of milk marketed or used in processing, along with payment for the inspection fees. These forms and fee payments are due by the 15th of the following month.

Where can I find more information on Oklahoma dairy products marketing?

For more information about marketing fluid milk or processed dairy products in Oklahoma, check out the information in the Dairy Section of the ODAFF Food Safety Division’s website, <http://www.oda.state.ok.us/food/dairy.htm>. Alternatively, call the Dairy Section of the ODAFF Food Safety Division at (405)522-6130.

For information about food safety training programs and finding dairy processing equipment, contact the FAPC by calling (405) 744-6071 or visiting the FAPC website, www.fapc.biz.

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