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Home Care of Dairy Products



COOPERATIVE EXTENSION SERVICE
SOUTH DAKOTA STATE UNIVERSITY
U.S. DEPARTMENT OF AGRICULTURE

Home Care of Dairy Products

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Just a short time on your kitchen counter can shorten the life of your dairy products by half or more.

Small numbers of bacteria are present in milk as it comes from the farm. Milk must be kept in clean containers and below 40F (4.4C) from farm to consumer.

Heat Treatment

Pasteurization extends shelf life. It permits milk to keep at least 10 days, if properly handled. Raw milk is heated to 161F (71.7C) and held for 15 seconds (known as high temperature short time or HTST). Heat treatment of 143F (61.7C) for 30 minutes is known as the batch method. These methods destroy disease causing bacteria and make milk safe for human consumption.

Sterilization, used for canned and condensed milks, destroys all microorganisms and spores, and the product is packaged under sterile conditions. Temperatures up to 250F (121.1C) are maintained for 25 minutes to achieve complete sterilization. These products, as long as unopened, have indefinite shelf lives.

UHT (ultra high temperature) milk represents the best compromise between pasteurized and sterile dairy products. UHT milk is heated to 275F (135C) for one or more seconds, then packed in a sterile environment in an airtight package to prevent bacterial contamination. The products may be stored at room temperature until opened. These products are also known as "long life" milk or cream. As the name implies, these products have extended, but not unlimited, shelf life (up to 60 days). Long life milk is used extensively in Europe but has very limited sales in this country.

It must be remembered that after any high heat treatment product is opened it **must** be handled as any other dairy product.

Storage Temperature

Storage temperature is the key to the shelf life of all perishable foods.

Temperatures of 40F (4.4C) or below retard growth of most bacteria. These same bacteria will multiply readily at higher temperatures. This applies to dairy products in trucks, in stores, and in your home.

A quart of milk left at room temperature warms more than 20F (11.1C) in 1 hour. It requires at least 4 to 6 hours to recool it in most home refrigerators.

The primary purpose of refrigerators is to keep perishable foods cold, not to cool and recool foods, consequently, keep a perishable food outside the refrigerator for the shortest time possible.

Every 5F (2.8C) rise in temperature cuts shelf life in half. Pasteurized, fluid dairy products will keep at least 10 days after processing if kept cool at 40F (4.4C). This is reduced to 5 days at 45F (7.2C), and 2 to 3 days at 50F (10.0C). All fluid dairy products, cultured products, and butter should be kept below 40F (4.4C) but above freezing. This includes whole, lowfat, skim, and flavored milks, and buttermilk as well as cottage cheese, other soft cheese, hard cheeses, and butter. Long term storage of butter is best if frozen.

Check the temperature of your refrigerator with an accurate thermometer. The thermometer range should be between freezing (32F, 0 C) and 50F to 60F (10C to 15.6C). If you want to use the same thermometer to check your freezer, the temperature should read down to at least 0 F (-17.8C) or lower.

To check the freezing point accuracy of your thermometer, place it in a cup of ice cubes and cold water. It should read 33F (0.6C).

Some dairy products must be kept frozen. They include ice cream and other frozen desserts. Butter should be frozen if kept for more than 2 weeks.

Moisture in ice cream melts above 0 F (-17.8C). If refrozen this causes large ice crystals to form. These ice crystals cause a grainy texture in the ice cream and are considered a defect.

Manufacturers store ice cream at minus 40F (-40C). Store display cabinets and home freezers should be set to hold at 0 F (-17.8C) or below.

Some products such as powdered milk can be stored at room temperature but below 90F (32.2C). Do not keep powdered milk products in moist areas, as this causes caking. Most canned milk products may be stored at room temperature.

Usually 3 to 5 days have gone by between processing and the time you purchase a dairy product at the store. Do not expect fluid dairy products to keep for 10 days after purchasing them.

The following are good guidelines for keeping dairy products. They may keep longer, but will seldom spoil in a shorter time. The times indicated are **after** store purchase and assume **proper handling**. Proper storage temperatures for fluid products is 35-40F (1.7-4.4C) frozen products is 0 F or less (-17.8C).

Three to five days

whole milk, lowfat milk, skim milk, chocolate or other flavored milk, buttermilk, cottage cheese

Seven to ten days

yogurt, sour cream, dips

Two to four weeks

ice cream, frozen desserts, butter, butter spreads, cheddar cheese, other hard cheeses, cream cheese

Light Exposure

The taste of dairy products, especially fluid products,

deteriorates after exposure to light. Direct sunlight is especially harmful; just 10 minutes exposure may cause a noticeable off-flavor.

The off-flavor caused by light is called oxidized, and the taste is usually described as tallowy or cardboard-like.

This chemical reaction does not stop when exposed milk is replaced in the dark. It continues under all storage conditions.

Glass and plastic containers permit most light rays to pass through, while paper containers with dark colored backgrounds provide the best protection.

Fluorescent light and diffused sunlight ("daylight" in the average room) are not as strong as sunlight. However, the effects are the same. They only take longer. Six to 8 hours exposure to fluorescent light in dairy cases is harmful to milk in glass or plastic containers. Up to 48 hours protection is provided by paper cartons.

Home Care Tips

Use an insulated doorstep box for home delivery of dairy products. It protects milk from sunlight and will slow warming from several minutes to a few hours. Put the products in your refrigerator as soon as possible after delivery.

If you buy milk or other dairy products at the store, pick them up last and go directly home. They should not be left in the car while doing other shopping. Another store tip is to select frozen dairy products from the middle to bottom of the freezer display case;

they will be colder. Place dairy products and frozen foods in proper storage as soon as you reach home.

Even serving dairy products damages flavor and texture and shortens shelf life.

Serve products directly from containers whenever possible; dishes are not free of bacteria. If you use serving dishes, do not put milk or other dairy products back into the original containers. Never "sample" directly from the storage containers.

Milk tastes best when served cold. Pour glasses of milk just before you sit down at the table and return the container to the refrigerator soon after eating. Do not leave milk out of refrigeration more than 30 minutes.

Always close or cover the container. Dairy products, especially milk, absorb other food odors very readily. Re-wrap cheese in plastic film or plastic bags with tight closures.

Rotate dairy products so you use the oldest first. This means placing the latest purchase in back of the older—"first in, first out." Remember: milk should be kept cold, covered, and in the dark.

Determining Age

Most dairy products carry an open date or code on the container. For fluid products in South Dakota, this pull date varies from 10 to 14 days following the date of processing. For example, products processed AUG 4 must be indicated as 8/14 or AUG 14.

The purpose of dating is to assure proper rotation in stores and your home. It does not tell you how long products will keep or when they will spoil.

If properly handled, fluid products will keep for 10 days or perhaps longer. An expiration date does not say if products were warmed up or were exposed to light. No food processor can tell you how long perishable products will keep. This depends on how stores and consumers handle them.

Yogurt and dips usually carry a 30-day expiration code. New packages and filling at hot temperatures may permit a 60- or 90-day shelf life. Ice cream and frozen desserts, if dated, have 3- to 6-month pull dates. Butter and cheese packaged by processors have a code on the container in most cases. Hard cheese is frequently cut into small pieces by the distributor or at the store and wrapped in heat sealed plastic films. Shelf life is usually shorter, as the wrapping may not be air tight and the re-wrapping may introduce spoilage bacteria.

You will see expiration dates on most perishable foods. Keep in mind that the date does not assure you of quality. Shelf life and flavor depend on store and home handling.

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