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EC61-637 Sanitation Practices in Producing Manufacturing Grade Milk

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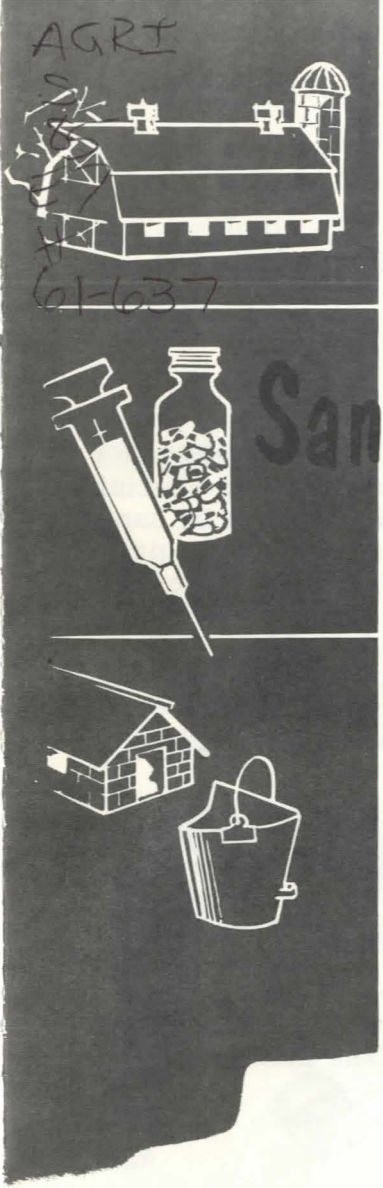
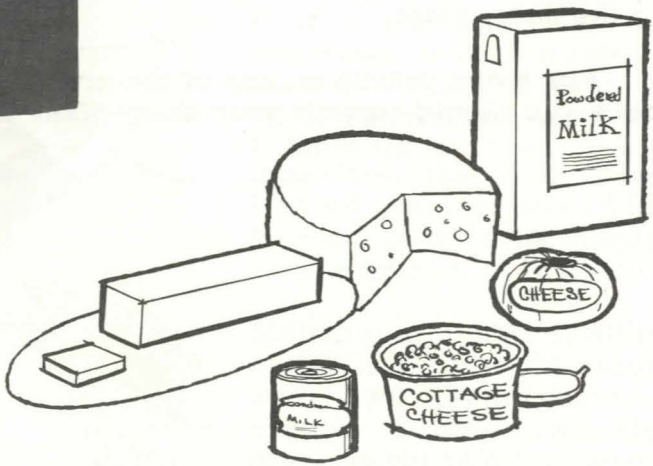


Sanitation Practices in Producing Manufacturing Grade Milk



EXTENSION SERVICE
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E. F. FROLIK, DEAN E. W. JANIKE, DIRECTOR

BY
T. A. EVANS
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Introduction

Milk is a highly nutritious food, extensively used and essential to the human diet. To preserve its special characteristics and maintain its quality it must be handled with extreme care. This is necessary if the products made from the milk are to be palatable and wholesome.

The recommendations in this publication are designed to promote good sanitary practices in milk production and to assure a supply of manufacturing grade milk of consistently good quality.

Milk is an extremely perishable food, easily contaminated through careless production and handling. The practices discussed here do not go into detail but, if followed carefully, will give you a product acceptable to the dairy plant.

For more details on any of the practices discussed here you should consult your dairy plant fieldman.

PRACTICE I---MAINTAINING THE HEALTH OF THE DAIRY HERD

Tuberculosis

Maintain a TB-free herd. Have all animals in the herd tested regularly. Remove reactors from the herd. Add only TB-free animals to the herd.

Brucellosis

Maintain a Brucellosis (Bangs) free herd. Have herd tested regularly. Vaccinate all calves between four and eight months of age. If cows abort from any cause, consult your local veterinarian.

Mastitis

Follow a definite mastitis control program. Use a strip cup regularly on all cows. Abnormal milk is that which appears watery, lumpy, stringy, bloody, or contains flecks or specks. If udders or milk appear abnormal, consult a veterinarian. Discard all milk from abnormal quarters. If animals are treated for mastitis, the milk from treated quarters should be kept out of the milk supply for a minimum of 72 hours.

Other diseases

Maintain a thrifty, healthy herd. It is best to raise your own herd replacements. If older animals are brought into the herd, they should be isolated from the rest of the herd for at least 30 days.

PRACTICE II---MAINTAINING GENERAL SANITARY CONDITIONS

Guard against human contamination of milk

Some diseases of humans such as diphtheria, septic sore throat, typhoid fever, etc., can be transmitted by the milker to the cow's udder. These bacteria then grow and multiply in the udder and are secreted with the milk. Persons drinking this milk may contract the disease. For this reason persons with a contagious disease or who have a sore throat should not be allowed to come in contact with milk or milk utensils. Consult a doctor about suspicious cases of sickness.

Guard against contamination of milk by water supply

Have water tested yearly or oftener for possible presence of harmful bacteria. Do not use water from contaminated supply. Locate and remove sources of contamination. Have wells or cisterns properly constructed to prevent entrance of surface drainage, dust, or dirt. Consult your dairy fieldman or county Extension agent as to how to protect a water supply against contamination and where tests can be made.

Control flies

Remove accumulations of manure daily from a stanchion barn and, during fly season, spread on fields at

least twice a week. Remove droppings from barnyard, lanes, etc., at least once a week. Be especially careful to remove material from under fence rows and other places where flies can hatch. Be sure that fly sprays are approved for use on dairy farms. Remember--good sanitation is the most effective fly control measure.

Keep the premises clean

Allow no piles of refuse to accumulate. Keep surroundings neat and clean.

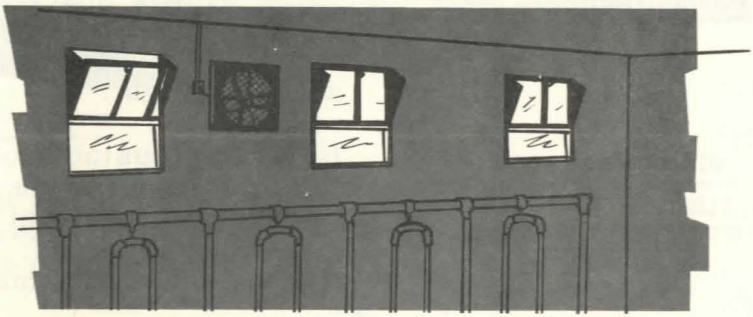
PRACTICE III---MAINTAINING SANITARY CONDITIONS IN BARNS AND YARDS

Provide adequate light in barn

Provide for both natural and artificial light in areas where cows are housed and milked. A good standard to follow is to allow four square feet of window space for each 60 square feet of floor space.

Provide adequate ventilation in barn

Control ventilation either by an adjustable flue system or by windows hinged at the bottom. Avoid drafts or strong air currents.



Keep barn clean

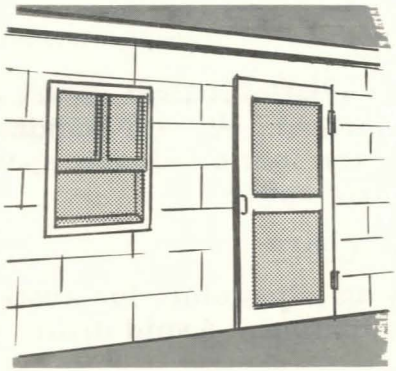
Have manure removed twice daily at least one hour before milking time. Feed dusty feeds after milking, or long enough before milking to allow dust to settle out of the air. Keep barn cleared of dust and cobwebs. Have walls and ceilings painted or whitewashed at least annually. Do not permit swine, fowl, or other animals in milking barn.

Keep yards clean

See that yards are drained away from barns and water supply and that yards are free from mud holes. Remove droppings at least once a week. Standard materials for surfacing yards are gravel, black top, or concrete.

PRACTICE IV---MAINTAINING SANITARY CONDITIONS IN THE MILK HOUSE

Control flies



See that doors, windows, and other openings are tightly screened. Screen doors should open outward and be self-closing. Provide screens for windows that can be opened. Use only those insecticides that are approved for use on dairy farms. Read and follow directions on the container.

Provide adequate light

Allow window space equal to 10 percent of the floor space. Provide adequate artificial light.

Provide adequate ventilation

Have an adjustable outlet flue in the roof of the milk house. Ventilate with windows when necessary. Mechanical ventilation may be

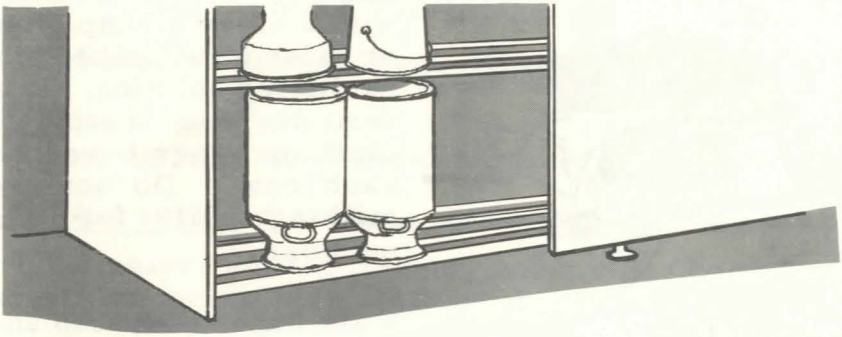
desirable in order to keep milk house dry and free of odors.

Provide adequate drainage

See that floor is tight, smooth, and impervious to moisture. Have floors slope to a drain. Concrete is standard material for floors. Have a bell type drain connected to a drain pipe leading well away from milk house. A six-inch glazed tile makes a suitable drain when laid two feet underground with sufficient fall to prevent clogging.

Provide sanitary equipment

Cans and other milk utensils should be of smooth, durable material which does not affect milk. They should be free from rust and dents and be of easily cleanable construction. Do not use utensils of galvanized iron. Cans should have tightly fitting covers which provide no place for water or dirt to accumulate. A metal rack for holding inverted utensils should be provided.



Keep clean

Paint walls and ceilings and keep free from dust and cobwebs. Scrub floors with cleaning compound daily. Store nothing in the milk house except dairy utensils.

PRACTICE V---KEEPING COWS CLEAN

Bed cows

Provide plenty of clean, absorbent material for bedding, such as straw, shavings, or similar materials. Remove when soiled.

Clip cows

Keep hair on udder, flanks, and belly clipped short. Clipping should be done in the late fall and during the winter as needed.

PRACTICE VI---MILKING

Clean clothes

Wear clean outer clothing made of washable material. Keep milking clothes clean.

Clean cow's udder, teats, and flanks

Wash udders which have become badly soiled. Wipe udder, teats, and flanks with a clean, damp cloth or paper towel soaked in a sanitizing solution. It is desirable to use a separate cloth or paper towel for each cow. Do not use milking pails for this purpose.

Clean hands

Wash hands with soap and water and wipe them dry before starting to milk. Wash again if hands become soiled during milking. It is very important to keep hands dry during milking.

Milk

a. By machine

Use a strip cup. Before starting to milk strip one or two streams from each quarter into a strip cup, noting whether the milk from each quarter appears to be normal. Once the cow has "let down" her milk, attach the machine promptly. Remove the machine as soon as the cow is through milking. Teach cows to machine strip. Hand stripping is neither sanitary nor necessary. Avoid letting the milk pails get too full, otherwise milk will be drawn into the vacuum line. If this happens the vacuum line should be cleaned immediately following milking.

b. By hand

Use a strip cup. Milk quietly and rapidly with dry hands. Use a small-top pail for hand milking. After a cow is milked, remove her milk from the barn to the milk house or milk room.

PRACTICE VII---CLEANING AND CARING FOR MILK EQUIPMENT

a. Pails, strainers, cans, etc.

Rinse

Use cool water to rinse utensils immediately after use.

Wash and scrub

Use hot water, a dairy cleaner, and a stiff fiber brush (never use soap). Scrub outside and inside.

Rinse

Rinse well with clean, hot (150° F. or more) water.

Storage

Clean utensils should be stored in an inverted position, up off the floor so they will not be splashed with water,

and on a metal rack.

Before using

All dairy utensils should be rinsed with a sanitizing solution just before use. Follow directions on container of product being used.

b. Milking machines

Rinse with cold or warm water

Immediately after each milking, place teat cups in a pail of cold or lukewarm water, and using vacuum draw water through the machine. Break the flow occasionally by pulling the teat cups out of the water, and then quickly immersing them again. Shake the milker thoroughly, then empty. Use fresh water for each unit.

Clean thoroughly

Suck through the milker a pail of hot water (130° F.) to which a heaping tablespoon of cleaning agent has been added. Brush the pail head, teat cups, and rubber parts with this cleaning solution. Use special brushes provided by manufacturer for scrubbing teat cups. Drain water from all units. It is desirable to completely disassemble milking machines once a day and wash all parts individually.

Rinse with hot water

Following washing, draw two to three gallons of good hot (150° F. or more) water through the machine. Do not raise teat cups out of water during the rinsing process.

Store carefully

Put milk tube on claw and place teat cups on a rack which holds a lye solution, or store them dry in a place free from dust and dirt.

Sanitize prior to use

Run a pail of sanitizing solution through the machines just prior to milking. Thoroughly drain machines.

PRACTICE VIII---STRAINING, COOLING, AND STORING MILK

Strain milk*

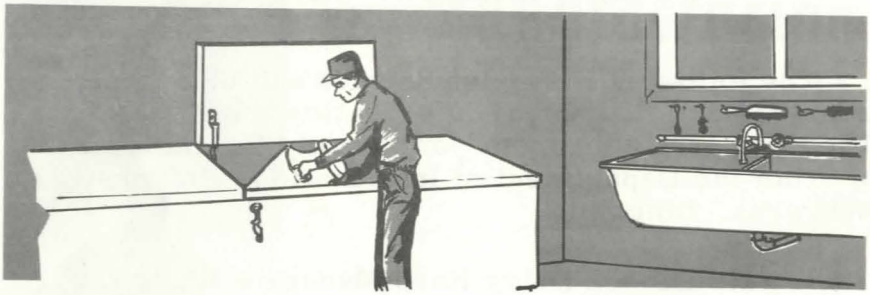
Strain milk through a sterile absorbent cotton pad. These may be obtained in sanitary packages from dairy supply houses or from the dairy plant which buys the milk. Use strainer pad for one milking only. Do not force milk through strainer pad by "bumping" on can.

Cool

Cool immediately to 45° F. or under by means of mechanical refrigeration.

Keep cool and covered

Keep milk at 45° F. or under. Keep tightly covered to protect from dust and dirt while in storage.



PRACTICE IX---PREVENTING OBJECTIONABLE FLAVORS AND ODORS IN MILK

Set up a feeding schedule

Arrange feeding time so that strongly flavored feeds such as silage, cabbage, turnips, rape, kale, and similar feeds will be fed immediately after milking.

* Straining milk is not a substitute for clean practices. Because much dirt is very soluble in milk, straining will not remove it. Neither will straining remove bacteria. The dirt on the strainer indicates that you have not used clean methods to produce milk.

Inspect pastures

Look for presence of plants having milk tainting flavors and odors, such as garlic, wild onion, peppergrass, pennycress or Frenchweed, and similar weeds.

Set up a pasturing schedule

If objectionable plants are found growing in pastures, arrange pasturing schedule so that cows are removed three to four hours or longer before milking time. Keep cows off badly infested pastures. Start a weed eradication program; consult county extension agent or dairy fieldman on method of weed eradication.

The following Extension Service and USDA publications contain additional information on this subject. They are available from your county Extension agent or from the Department of Information, University of Nebraska, Lincoln.

1. EC 631 Dairy Herd Management
2. EC 60-635 Mastitis is a Costly Disease
3. EC 701 Farm Water Systems - Insulated Pump Houses
4. EC 703 Farm Sewage Disposal
5. EC 58-1588 Fly Control in Dairies
6. EC 57-632 Good Tasting Milk
7. FB 2017 Clean Milk Production
8. FB 2078 Cleaning and Sanitizing Farm Milk Utensils
9. FB 2079 Farm Methods of Cooling Milk
10. FB 2175 Equipment for Cooling Milk on the Farm
11. Dairy Buildings Plans Catalog