

## **Quality Assurance from Milking to Processing**

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The most important requirement for a high quality dairy goat product is that the product must be safe, that is, free of pathogenic bacteria and antibiotics, be nutritious and have a good flavor. To obtain the highest quality of dairy goat products, it is critical to start with the highest quality of raw milk possible. The production of goat milk on the farm and the manufacturing of milk products, such as fluid milk, powdered milk, cheese, ice cream and yogurt, in the processing facilities are subject to the Pasteurized Milk Ordinance (PMO). In addition to the PMO, all goat milk (raw milk to finished products) undergoes inspection, sampling, laboratory testing, and conforming to quality standards to ensure it is pure and wholesome for human consumption.


On dairy goat farms, a Standard Operating Procedure (SOP) of goat management, personal hygiene, milking procedure, and milk storage must be in place. Lactating goats must be in good health. Staff that milk the goats must carry out good sanitation practices at all times. A routine procedure from pre-dipping to post-dipping teats must be performed at each milking. And milk should be cooled in a storage tank to 45°F or lower within two hours.

Prior to processing, all raw goat milk is subjected to testing for chemical composition, antibiotic residues, bacterial quality and somatic cell count. Almost all goat milk products undergo pasteurization by law, with the exception of aged cheeses. Controlled pasteurization destroys all pathogens and almost all bacteria present in raw milk, and helps ensure a safe, high quality and long shelf-life dairy product for consumers. To complete a sound quality assurance program, good post-pasteurization practices must be carried out from packaging, storage, product delivery and handling in the store.

Following are outlines of quality assurance from dairy farms to processing facilities.

Slide 1

Quality Assurance from  
Milking to Processing



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Slide 2

Dairy Foods

- High moisture - water activity
- Nutritious
- Low acid except yogurt



**Perishable**



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Slide 3

The PMO

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Grade A  
Pasteurized Milk Ordinance



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Slide 4



Public Health Service  
Food and Drug Administration  
U.S. Dept. of Health and Human Services

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Slide 5

**Milk definition**

- Milk (cow, goat and sheep) is the normal lacteal secretion, practically free of colostrum, obtained by the complete milking of one or more healthy lactating animal.

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Slide 6

**Standards for Grade A Products**

- Raw milk
- Pasteurized milk and milk products
- Aseptically processed milk and milk products

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Slide 7

**Raw Milk**

- Temperature: < 45 °C within 2 h after milking
- Bacterial limits: <100,000 cfu/ml for individual tank milk **Somatic cell count:** <1,000,000/ml for individual tank milk (750,000/ml for cow milk, to be lowered to 400,000/ml effective in 2007)
- Drug residues: No positive results

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Slide 8

**Pasteurized Milk and Milk Products**

- Temperature: < 45 °C or less
- Bacterial limits: < 20,000 cfu/ml
- Coliform count: < 10 cfu/ml
- Phosphatase test: < 350 milliunits/L
- Drug residues: No positive results



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Slide 9

**Dairy Goat Farm Inspection**



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Slide 10

**What Does an Inspection at Dairy Barn Involve?**

- Equipment
- Tank Room
- Milking Parlor
- Surroundings
- Waste Handling
- Drugs
- Water Supply



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Slide 11

**What Does an Inspection in Processing Plant Involve?**

- Receiving Area
- Equipment Checks
- Record Reviews
- Processing Area
- Warehouse & Dry Goods
- Personal Hygiene



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Slide 12

**HTST Pasteurizer**



**Chart Recorder**



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Slide 16

**Check Raw Milk from Dairy Farms Monthly**

- Bacteria
- Temperature
- Somatic Cell Counts
- Inhibitor (drug residue)



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Slide 17

**Check Pasteurized Milk Samples Monthly**

- Total bacteria
- Coliform
- Phosphatase test
- Drug Residues
- Butterfat
- Temperature
- Vitamin Assays



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Slide 18

**Enforcement**



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Slide 19

**Antibiotic Residues**

- A positive test automatically carries at least a one-day suspension of the permit and the milk must not be offered for sale or consumption until subsequent samples are proven to be free of antibiotics.



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Slide 20

**3 out of 5 Compliance**

- SCC is usually performed using Fossomatic instruments. If SCC exceeds 1,000,000/ml or the total bacteria count exceeds 100,000 cfu/ml 3 out of 5 times, the milk is down-graded.



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Slide 21

**3 out of 5 Compliance**

- the Grade A permit is suspended.



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Slide 22

• A suspended permit can be reinstated by the inspector if all the violations have been corrected accordingly.



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Slide 23

**Hazard Analysis and Critical Control Point**

<a href="#">HACCP Home</a>	<a href="#">HACCP Overview</a>	<a href="#">Joint HACCP</a>	<a href="#">Simplified HACCP</a>	<a href="#">Other HACCP Activities</a>	<a href="#">Related Information</a>
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**Dairy Grade A Voluntary HACCP Pilot**  
Overview | Questions and Answers | Forms

Overview

- NCDMS HACCP Pilot Program, Phase II Extension May 2001
- NCDMS HACCP Process May 2001

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Slide 24

**Pathogens posing a risk to safety of dairy foods**

- *Salmonella*
- *Listeria monocytogenes*
- *E. coli*
- *Staphylococcus aureus* (low risk pathogen where starter cultures are utilized; outbreaks linked to semi-hard cheeses in France)

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Slide 25



## Salmonella


**Salmonella Outbreak Affecting More People**

**What Can You Do to Prevent Salmonella Poisoning?**

By [Michael Smith, MD](#)  
WVMD Medical News

Reviewed by [Danielle Stappin, MD](#)  
on Monday, August 14, 2014

Aug. 3, 2014 - Health officials are reporting that the number of people affected by a recent salmonella outbreak continues to climb. What can you do to prevent salmonella food poisoning?




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Slide 26



## Sources of recontamination

- a. Hands
- b. Insects
- c. Hair
- d. Sneeze
- e. Wounds
- f. Bandages
- g. Gloves
- h. Moisture dripping into product
- i. Unsatisfactory equipment covers or processes




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Slide 27



**High quality dairy products are difficult to come by!**

**A total quality assurance program from farm to processing plant makes it possible!**

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