



**THE DAIRY PRACTICES COUNCIL®**

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**CHECKLIST OF**  
**CONTROL POINTS FOR**  
**GOOD MANAGEMENT PRACTICES ON**  
**DAIRY FARMS**

Publication: DPC 64  
Single Copy: \$ 3.00

May 1997

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# **Checklist of Control Points for Good Management Practices On Dairy Farms**

## **Abstract**

This guideline provides a compilation of reference checklists that give an overview of the points of good management practices used in the production of a high quality product. Each checklist includes a list of DPC guidelines available for more in-depth information on each topic. Other sources of information sighted include:

Northeast Regional Agricultural Engineering Service (NRAES), Cooperative Extension, 152 Riley-Robb Hall, Ithaca, NY, 14853-5701, Tel. (607) 255-7654.

National Electric Code, National Fire Protection Association, P.O. Box 9101, Batterymarch Park, Quincy, MA, 02269-9101, Tel. (617) 770-3000.

American Society of Agricultural Engineers (ASAE), 2950 Niles Rd., Saint. Joseph, Michigan, 49085-9601, Tel. (616) 429-0300.

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## PURPOSE

The purpose of this guideline is to provide a compilation of checklists of the control points involved in good management practices for the production of high quality milk on the dairy farm. Each checklist also includes references to complete in-depth guidelines on each topic, which are available from DPC.

## INTRODUCTION

Good management practices on the dairy farm result in healthy animals, maximum production and high quality milk. The final result is increased profitability for the dairy producer and a safe product for the consumer.

Food borne illness is a major public health concern. A new program to insure food safety has been established in processing plants; the program is referred to as HACCP (Hazard Analysis Critical Control Points). The critical control point defines where a control must be put in place to prevent or reduce a food safety hazard. The control point is an action taken to control a hazard. Food manufacturers and distributors have the primary responsibility for food safety, however, the quality of the raw product is critically important. Therefore, as HACCP is mandated for the processors, an important issue for producers is “Preharvest Food Safety” through good management practices.

“Thus, producers, veterinarians, and others involved in animal agriculture must not only ensure animal health and well-being, but must manage the production unit in a way that addresses food borne and waterborne public health concerns. Therefore, this new “preharvest food safety contract” between producers, veterinarians, and consumers will require on-farm food safety practices that will minimize microbial contaminants (e.g. Escherichia coli 0157:H7 and Salmonella species) as well as chemical residues (e.g. antibiotics, herbicides, pesticides).”<sup>1</sup>

Critical control points on the dairy farm have been defined as abnormal milk and raw milk cooling. An important step in maintaining “Preharvest Food Safety” is to define the action control points of dairy management practices.

## HOUSING CHECKLIST

Farmstead critical areas and good management practices in production of high quality milk are identified below. Answer yes if the item is provided or the practice is in use. For each item with a no answer, use the references to identify changes that could be made to improve the item.

### **Farmstead**

- Y Bulk truck and personnel access that allows for the milk pickup in a clean area
- Y Drainage of external water away from animal housing, milking and milk storage areas
- Y Proper waste handling systems for restrooms
- Y Animals kept from milking center wastewater and manure storage areas
- Y Fly population controlled (minimizing breeding areas, spraying, etc.)
- Y Manure and milking center wastewater managed to minimize flies, odors, and to protect water quality

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<sup>1</sup> James Cullor, University of California, Davis, CA, Implementing the HACCP Program on Your Client’s Dairies, Veterinary Medicine, March 1995, p. 290-295.

**Air Quality**

- Y Air within barns or shelters is fresh and dry with minimum odor
- Y No signs of excessive condensation or dripping on ceilings, walls, or other barn components
- Y All areas of the barn receive adequate fresh air (good air exchange and air movement)
- Y Air from the animal areas is not directed through the parlor and tank room

**Animal Resting Area**

- Y Clean, dry and comfortable
- Y Easy access to feed and water
- Y Cow can comfortably recline, lie, and rise in natural manner
- Y Are the cow resting areas readily used?
- Y Properly maintained
- Y Adequate dimensions

**Dry Animals**

- Y Clean, dry comfortable area for 2 weeks after drying off and before freshening
- Y Feeding program managed to minimize metabolic diseases

**Maternity Area**

- Y Clean, dry, comfortable
- Y Segregated from other animals
- Y Utilities (lights, hot and cold water) available for care of animals requiring additional medical attention

**Animal Travel Lanes and Standing Surfaces**

Paved

- Y Durable, easily cleanable surface
- Y Cleaned regularly
- Y Liquids not accumulating on the surfaces
- Y Provides traction for animals and workers
- Y Wide enough lanes to prevent congestion

Unpaved (pasture, dry lots, exercise lots, lanes etc.)

- Y Lanes stabilized and graded to prevent mud holes
- Y Lanes wide enough to accommodate animal traffic and allow for easy maintenance
- Y Maintained and used to keep animal clean
- Y Wide enough to allow animals to maneuver and to minimize congestion
- Y Appropriate crossing for waterways

- Y Pasture layouts that prevent mud at water and/or supplemental feed areas
- Y Proper facilities and management to keep animals out of wet areas
- Y Pastures managed to maintain adequate plant growth

### **Building**

- Y Areas, as required by milk regulations, have durable and easily cleanable surfaces
- Y Buildings properly maintained
- Y Bird and rodent resistant construction
- Y Maintain facilities to discourage rodents

### **Lighting**

- Y Adequate general day and night light levels for cows and workers to move around safely
- Y Sufficient illumination at udder in milking area
- Y Sufficient illumination at areas where proper animal identification is critical, e.g. to identify treated animal in milk string
- Y Extra lighting as required for cow examination and treatment and for cleaning and examining milking equipment

### **Milking Area**

- Y Suitable device properly installed and maintained for restraining animals
- Y Operator has good safe access to cows for udder examination, cleaning, and machine attachment
- Y Area kept clean
- Y Minimal manure accumulation
- Y Milk contact items stored in a clean, safe area that prevents contamination
- Y Proper storage of cleaning materials, milking supplies and related items and drugs
- Y Provisions for cleaning/sanitizing teats
- Y Provisions to keep abnormal or treated milk from entering bulk tank

### **Detailed Information is Available in DPC Guidelines**

Housing	DPC 1	Planning Dairy Free Stall Barns
	DPC 5	Directory of Dairy Farm Building & Milking Resource People
	DPC 37	Planning Dairy Stall Barns
	DPC 45	Gravity Flow Gutters for Manure Removal in Milking Barns
	DPC 41	Milkrooms and Bulk Tank Installations
	DPC 54	Selection & Construction of Herringbone Milking Parlors
	DPC 59	Production and Regulation of Quality Dairy Goat Milk
	DPC 66	Planning a Dairy Complex – “100+ Questions to Ask”
	DPC 73	Layout of Dairy Milkhouses for Small Ruminant Operations
Ventilation	DPC 6	Natural Ventilation for Dairy Tie Stall Barns
	DPC 12	Tunnel Ventilation for Dairy Tie Stall Barns



**Detailed Information is Available in DPC Guidelines**

Water	DPC 30	Potable Water On Dairy Farms Local Plumbing Codes
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**ENVIRONMENT**

- Y Maintain a clean, dry environment
- Y Limit exposure to: contaminated bedding, muddy areas, stagnant water
- Y Avoid overcrowded conditions
- Y Reduce stress causing conditions which result in susceptibility to disease
- Y Be aware of milk films containing contaminate bacteria (biofilms) on surfaces such as gate handles in the milking parlor, routinely sanitize these areas with disinfectant
- Y Be aware of areas with the potential of containing a heavy concentration of bacteria (a high bioburden)
- Y Maintain cleanliness of animals

**Detailed Information is Available in DPC Guidelines**

Environment	DPC 45	Gravity Flow Gutters for Manure Removal in Milking Barns
	DPC 46	Dairy Odor Control

**ELECTRICAL SYSTEM****Farm Buildings**

- Y Electrical system inspected by a competent electrician regularly (annually unless needed sooner)
- Y Maintain integrity of electrical fixtures remain as designed (waterproof still waterproof, etc)
- Y Keep covers on all electrical boxes
- Y Use GFCI protection on all non-dedicated receptacles
- Y Properly sized fuses on all electrical circuits
- Y Immediately investigate apparent stray voltage or electric shocks
- Y Electric fences grounded as specified by manufacturers (usually three ground rods minimum on solid state fencer)
- Y Utility lines primary neutral to earth voltage monitored regularly

**New Construction**

- Y Equipotential plane installed in accordance with National Electric Code (NEC) and ASAE EPH73-1994
- Y Wiring methods as specified in Article 457 of NEC
- Y All stalls, milklines, metal watering tubs, etc. bonded to the electrical grounding system
- Y Electrode grounding system location designed to minimize earth current flow near the animals
- Y Farmstead electrical distribution system designed to assure voltage drop on

neutral lines is not a problem and to centralize disconnect locations

### **Detailed Information is Available in DPC Guidelines**

DPC 42	Stray Voltage on Dairy Farms
National Electric Code	National Fire Protection Association
ASAE, EP473-1994	Equipotential planes in Animal Containment Areas
Local Electrical Codes	

### **PATHOGEN REDUCTION**

- Y Use disease control programs
- Y Follow vaccination programs
- Y Use hospital pens and calving pens
- Y Use dry cow treatment, dry treat all animals at dry off
- Y Monitor for mastitis using DHI or similar programs
- Y Cull chronic mastitis animals
- Y Test purchased milking animals for mastitis
- Y Handle and dispose of abnormal milk in proper manner

### **Detailed Information is Available in DPC Guidelines**

Udder health evaluations	DPC 18	Fieldperson's Guide to Troubleshooting High Somatic Cell Counts
	DPC 71	Farmers Guide to Somatic Cell Count in Sheep
	DPC 72	Farmers Guide to Somatic Cell Count in Goats
Antibiotic residue prevention	DPC 22	Control of Antibacterial Drugs and Growth Inhibitors in Milk and Milk Products
Pathogen Reduction	DPC 69	Abnormal Milk-Risk Reduction and HACCP
	DPC 78	Biosecurity for Sheep and Goat Dairies
	DPC 33	Brucellosis and Some Other Milkborne Diseases
	USDA	Brucellosis Website <a href="http://www.aphis.usda.gov/vs/naahps/brucellosis/">www.aphis.usda.gov/vs/naahps/brucellosis/</a>

### **MILK HARVEST**

#### **Milking Procedures**

- Y Milk clean, dry, sanitized teats
- Y Dry only one cow per towel
- Y Check foremilk for abnormalities
- Y Animals secreting abnormal milk should be milked last or with separate equipment and milk discarded
- Y Attach units in a timely fashion
- Y Minimize liner slippage
- Y Disinfect teats after milking with an effective product; teats should be dry before cows exit to cold areas
- Y Discard unused dip from recirculating dip cups and clean dip cups after each milking
- Y Check milk filter for dirt at end of milking
- Y Make provisions to keep treated milk from entering bulk tank

- Y Regularly review milking procedures with all people who milk

### **Milking Equipment**

- Y Have the entire system evaluated during milking time by a competent technician or specialist, at the frequency recommended by the Milking Machine Manufacturer Council, ASAE. Milking procedures should be reviewed and static system evaluations should also be included
- Y Repair, replace or upgrade any components before they are worn out
- Y Clean equipment after each milking or a minimum of twice a day; see DPC Guideline 4 for detailed procedures
- Y Sanitize equipment before milking according to supplier recommendations

### **Detailed Information is Available in DPC Guidelines**

Milking procedures	DPC 11	Sediment Testing and Producing Clean Milk
	DPC 17	Causes of Added Water in Milk
	DPC 18	Fieldperson's Guide to Troubleshooting High Somatic Cell Counts
	DPC 38	Preventing Off-Flavors in Milk
	DPC 49	Postmilking Teat Dips
Milking equipment	DPC 2	Effective Installation, Cleaning and Sanitizing of Milking Systems
	DPC 4	Installation, Cleaning and Sanitizing of Large Parlor Milking Systems
	DPC 9	Fundamentals of Cleaning and Sanitizing Farm Milk Handling Equipment
	DPC 23	Preventing Rancid Flavors in Milk
	DPC 24	Troubleshooting High Bacteria Counts of Raw Milk
	DPC 28	Troubleshooting Residual Films on Dairy Farm Milk Handling Equipment
	DPC 41	Milkrooms and Bulk Tank Installations
	DPC 43	Farm Tank Calibrating and Checking
	DPC 48	Cooling Milk on the Farm
	DPC 58	Sizing Dairy Farm Water Heater Systems
	DPC 59	Production and Regulation of Quality Goat Milk
Antibiotic residue prevention	DPC 65	Installing and Operating Milk Precoolers Properly on Dairy Farms
	DPC 70	Small Ruminant Milking Systems
	DPC 22	Control of Antibacterial Drugs and Growth Inhibitors in Milk and Milk Products

<b>MILK STORAGE AND COOLING</b>
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- Y Bulk tank washed and sanitized after every pick up
- Y Surfaces clean, with no evidence of milkstone or protein deposits
- Y Outlet valves, agitators, bridge surfaces, and gaskets around the manhole clean with no evidence of milkstone or protein deposits
- Y Cleaning and sanitizing program developed and followed
- Y Temperature of the milk down to 50°F (10.0°C) within 1 hour of milking and to 40°F (4.4°C) or less (36°F (2.2°C) recommended) within one

- additional hour
- Y Blend temperatures remain below 45°F (7.2°C) at all times during the second and subsequent milkings
  - Y Check calibration of tank thermometer
  - Y Agitator(s) run at least 5 minutes every hour
  - Y Is it possible for contamination to occur due to condensation from dripping pipes and ceilings?
  - Y Is care used in rinsing the top of the bulk tank to prevent the entrance of water when milk is present?
  - Y Milkhouse area free from dust or dirt that might be drawn into the area around the cooler condenser unit?
  - Y Last rinsing of the bulk tank, before milking, done with an approved sanitizer in the proper concentration?

**Detailed Information is Available in DPC Guidelines**

- DPC 7 Sampling Fluid Milk
- DPC 9 Fundamentals of Cleaning and Sanitizing Farm Milk Handling Equipment
- DPC 23 Preventing Rancid Flavors in Milk
- DPC 24 Troubleshooting High Bacteria Counts of Raw Milk
- DPC 28 Troubleshooting Residual Films on Dairy Farm Milk Handling Equipment
- DPC 41 Milkrooms and Bulk Tank Installations
- DPC 48 Cooling Milk on the Farm
- DPC 50 Farm Bulk Milk Collection Procedures
- DPC 58 Sizing Dairy Farm Water Heater Systems
- DPC 65 Installing and Operating Milk Precoolers Properly on Dairy Farms