



B.C. DAIRY TALK

Dairy Programs

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Maintaining Equipment – Maintaining Profits

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Your milking equipment is an important link between your cows and the consumer. Properly functioning milking equipment will result in healthy cows, faster milk out, better quality milk, and more satisfied consumers.

Correct Installation

Milking equipment will work properly only if it is installed correctly. Your equipment dealers are familiar with the equipment they sell and the *B.C. Standards for the design, fabrication and installation of milking and milk handling equipment*. Use their knowledge and experience to help ensure your system works efficiently and profitably. An important part of a milking equipment installation is a complete system analysis under milking conditions. These tests should be done by a trained person, like your dealer's equipment technician. (In B.C. some processor field staff, milking equipment consultants and BCMAFF Dairy staff have also received this training.)

Routine Maintenance

Once your milking equipment has been properly installed, a maintenance program should be established. You can identify, correct and prevent problems that would otherwise cost you money.

Different components of the system need varying intensity and frequency of checks. Be sure to read (and keep) owners' manuals for specific maintenance instructions. (Ask your dealer for them if you cannot find the originals.) Attached is a schedule outlining what to check on a daily, weekly, monthly and

biannual basis. Below are some detailed examples of these routine maintenance checks:

Daily - Critical Functions

Examples:

- Check the vacuum level before milking and several times during milking. This could prevent catastrophic equipment failure or irritated teat ends that results in mastitis.
- Check milking units — Have they cleaned? Are inflations, hoses and air tubes twisted or cracked? Are claw vents open? Answering these questions on a daily basis helps to reduce teat end irritation and exposure to mastitis-causing organisms as well as avoid high bacteria counts.

Weekly – Cleanliness

Examples:

- Check milk contact surfaces (e.g., milk flow sensors, milk meters, weigh jars, receiver jars) for deposits of fat (greasy), protein (rainbow film) and milkstone (whitish film or crust). This will identify washing problems which you can correct, thereby avoiding high bacteria counts.
- Check to ensure clean air filters and inlets on pulsators. Clean air supply lines, regulators and sensors. Allow equipment to function at its best and minimize premature wear and failure.

Monthly - Repair, Clean and Update

Examples:

- Check vacuum pump motors, belts, bearings, oil and air filters (see your manual and your dealer for assistance). These checks help to identify problems before they become critical — a seized vacuum pump is not something you want to experience or afford! (And it usually happens on a weekend!)
- Check that electrical connections to pulsation units, electronic meters and take-off controls are clean and tight.

Every Six Months - System Analysis

Examples:

- A washing system analysis could identify insufficient cleaning solution strength. Seasonal changes in water quality or a change of soap may affect the strength.
- A cooling system analysis will identify leaks, low coolant levels and slow cooling performance. Scheduled service costs less than an emergency service call or a lost tank of milk.

- Vacuum testing, pulsation graphing, automatic take-off timing and function analyses help identify unseen equipment wear and allow fine tuning for maximum performance (e.g., faster cow through-put, cleaner milk-outs, minimum teat end impact and irritation).

Profit from a Checklist

Establishing a routine means that specific checks are done the same way, at the right time, every time. Use a checklist such as the one shown in this factsheet or work with your dealer to make your own. Either way the checklist must ensure that nothing is forgotten. Establish a maintenance routine with your milking staff, assign specific tasks, and the time and order in which they should be done. Post it in the milkhouse where your staff can see and use it. A service contract with a trusted equipment dealer is another excellent way to have monthly maintenance and six month analyses done. The establishment of a maintenance routine will go a long way to maximizing the life of your milking equipment, your income and the pride you take in providing high quality milk.

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Milking Equipment Checklist						
Check/Maintain	EM	Da	Wk	Mo	6 Mo	Notes
VACUUM						
Vacuum Level	X					check gauge before and often during milking
Vacuum Pump		X				lubrication, temperature
Vacuum Pump				X		motor, belts, bearing, oil, air filter (see manual)
Regulator			X			air filter, function
Regulator				X		diaphragms, sensors
Gauge					X	calibration, condition
Distribution System					X	pipelines (including pulsation), balance tanks, drains, valves
System Performance Check					X	
PULSATION						
Pulsator Unit, Electrical Connections				X		clean, service, repair
Air Inlets			X			clean, no dust, cobwebs
Clean Air Line & Filter			X			clean, not dusty
System Performance Check					X	pulsation rate, ratio
MILKING						
Milking Unit	X					including hoses: clean
Air Vent	X					not blocked
Rubber Parts	X					inflations, hoses, air tubes: not twisted, ripped, cracked; inking out
Claw, Bowl, Shells				X		clean; free of dents, cracks; ferrels not out of round; gaskets OK
Milk Hoses				X		no build-up, not cracked, opaque or inking
Weigh Jars		X				clean, no mineral film, no manure or debris on outside
Meters, Sensors			X			check inside surfaces, no build-up, slippery feel
Automatic Takeoffs					X	each one is removing unit at right time
MILK TRANSFER SYSTEM						
Milk Pipeline				X		no build-up, no low spots
Receiver Jar			X			clean, no water, no build-up, no sediment
Trap			X			no build-up, no milk, draining
Milk Pump					X	clean inside, not worn (often a dealer service)
Milkline Filters		X				watch for mastitis; do not reuse
Gaskets, Valves, Drains				X		in good condition, no slippery/greasy feel
MILK COOLING						
Precoolers					X	service as per manufactures instructions
Farm Holding Tank – outside			X			no milk drips, no hard water film; function
Farm Holding Tank – inside			X			lids, gaskets, agitator; no build-up, clean, in good condition
Thermometer					X	working, calibration
Cooling System				X		compressor screens clean, motors start/stop OK
Refrigerant Level/System Analysis					X	by refrigeration technician
WASHING						
Water Supply			X			pressure; temperature between 74° & 80° C
Wash Control Panel			X			water, chemicals, time (watch for a complete washing)
Tank Washers			X			as above; washing the whole tank
System Performance Check					X	solution strength/temperature, air injector function

EM = every milking Da = every day Wk = weekly Mo = monthly 6 Mo = every 6 months

NB: Build-up can be milkstone (whitish film or crust), milk fat (greasy and/or yellowish film or gel) or protein (purplish rainbow film).