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Dairy for life

Water Fact Sheet

It is important that the water you use to clean your milking plant meets Ministry for Primary Industries' (MPI) standards because this water can potentially come in contact with milk and affect its quality.

Your water is assessed by your Farm Dairy Assessor in three areas:

1. **E.coli:** water must be free of E.coli (3 yearly check)
2. **Clarity:** water must be relatively free of solids (annual check)
3. **Checklist:** the water source is assessed for risks which could compromise quality (3 yearly; this is done when the E.coli water test is done. Or, when any significant change is made to the water supply)

Water that passes the criteria receives a 'compliant' status and needs no further management. Water that fails the criteria is 'non-compliant' and must be managed through a water improvement plan.





Requirements for farm dairy water:

- Water entering the wash tub must be compliant.
- Water entering the water heater must be compliant.
- Compliant water for the farm dairy means maintaining water to the below standards:
 - Turbidity: is required to be equivalent to no more than 5 NTU. Water that does not meet requirements for turbidity is required to be filtered to remove suspended solids.
 - E.coli: is required to be absent per 100ml (tested every three years by an approved IANZ test method).
- There must be an easily accessible point to sample water for turbidity and coliforms.
- Water used to rinse filter cage/manifold and any other milk contact surfaces must be compliant.
- Water used to rinse the cow's teats isn't covered by the farm dairy water standard. This water should be of a good standard.

If farm dairy water is non-compliant:

1. Completing work to fix the cause of the water failure

Fonterra will support farmers to achieve compliant water. Refer to your annual Farm Dairy Assessment report or discuss with your local Farm Dairy Assessor.

2. Implement a temporary water exclusion policy

Temporary water exclusion is a management plan which is put in place to ensure non-compliant raw water does not contact your milk. This means non-compliant raw water cannot be used to:

- rinse the plant after CIP
- flush the plant at the start of milking
- flush milk from the plant to the vat at the end of milking, or
- any other purpose where it may come into contact with raw milk intended for supply.

Any water exclusion plan must be approved by your Farm Dairy Assessor.

MPI requires dairy processors like Fonterra to manage farmers with a documented water management plan policy differently to those farmers with compliant water; for this reason suppliers on temporary water exclusion:

- Face a lower trigger level for Milk Quality downgrades on the freezing point test (added water), meaning you have greater chance of demerits.
- Will incur a monthly charge of \$250 plus GST, which covers the cost of the additional testing and monitoring.
- Must run milk to waste at the start of milking and/or treat your final rinse water.
- Must treat all rinse water in your wash tubs before it enters the plant or vat. A dose of approved liquid chlorine at 5ml per 100L of water, or product labeled instructions, needs to be added to make water suitable for rinsing detergent residues (check label requirements).

If you have non-compliant water and complete work to make your water compliant, Fonterra will pay the costs involved to re-assess your water.

If your water is re-assessed and found compliant, all water exclusion charges incurred in the current season will be reimbursed.

During your annual Farm Dairy Assessment your Farm Dairy Assessor will work with you to come up with a plan to address the issues with non-compliant water. They will work to agree actions and timelines and be able to support with any questions you might have about options.

Most common solutions:

Ultraviolet (UV) Light

Ultraviolet works by sending shortwave UV light through the water supply. The radiation eliminates parasites, bacteria, fungi or other micro-organisms in the water. A 1 micron filter prior to the UV is essential. UV bulbs need to be changed every 12 months and the internal glass kept clean.

Cartridge filtration

Suitable when contaminants are relatively low. They are simple and easy to maintain, and usually used in conjunction with other solutions.

Ozone

Ozone is an unstable molecule; it releases free radicals that are toxic to the micro-organisms found in water. Ozone solution is mixed on site and released into the water supply. Generally this is more expensive.

Rain water collection

In poor quality water areas, often the best solution is to collect and store water from roofs of farm dairies, implement sheds or any roof that is in the proximity of the farm dairy. Further water treatment required.

Aeration and settling

Aeration and settling is an inexpensive and almost foolproof method of iron removal. Aeration means the water is mixed with air. As a further control, following aeration and settling, chlorination can be used to control iron.

Filtration Systems

There are many different filtration systems available to all farmers. They are generally more expensive and high in maintenance. Before any water filtration system can be designed or considered the water must first be tested to find out what elements are to be removed. The system is then designed on the available test results.

New bore or new water source

Feasibility depends on cost and availability of suitable quantity and quality water.

Chemical Dosing

The most common sterilising agent to remove bacterial hazards is chlorine. Use enough to leave a free chlorine residue of 0.2 to 2mg/L (0.2 – 2ppm) in the water prior to use. The residue is the amount left after the chemical has reacted with the bacterial and organic matter in the water. Free Chlorine must not exceed 5ppm.

Note: Make sure that any chemical added to water for use in farm dairies is MPI approved and ensure that storage guidelines and expiry dates are followed.



Where the water source is compliant but fails at the point of use (dairy shed):

- Extra sampling can be used to find the source of the contamination. The obvious remedy is to clean the tank and flush the system with chlorine solution. Otherwise talk to your water expert for more information on what solution is best.
- Empty and remove the sludge from the bottom of the tank/s.
- Clean all surfaces with a sanitising solution.
- Refill the tank and dose with approved chlorine.
- Open all taps in the dairy allowing the chlorine solution to pass and flush any bacteria from the water lines.
- Replace any obvious perished hoses (potential contamination).
- Have the water retested.

Support:

To make a plan to get off water exclusion, please call your local Farm Dairy Assessor. Alternatively you can contact the Farmer Support Team on 0800 65 65 68.