

Managing Biofilm Growth in Waterlines

Elanco™

A CLEAN, CONSISTENT HERD WATER SUPPLY IS FUNDAMENTAL TO GOOD DAIRY PRODUCTION.

Any restriction on the ability of a cow to drink will reduce her ability to produce milk. The following techtalk outlines a reliable method to improve water quality, reduce the risk of water pressure reduction and line blockages that may result from biofilm growth in the waterline.

Water pipes normally contain a thin film of algae and bacteria that live on the inner surface of the pipe. Growth of these “bugs” can escalate when a “food source” is introduced into the water supply.

Water medication through in-line dispensers can contribute to biofilm growth because many of the additives act as an energy source. Sugars, proteins or other nutrients, will feed any algae or bacteria present. If not addressed, this growth can reduce water flow or block sections of water line. Products that may contribute to this include molasses based additives, some forms of copper, some mineral/trace element products and the carriers or suspending agents in liquid supplements.

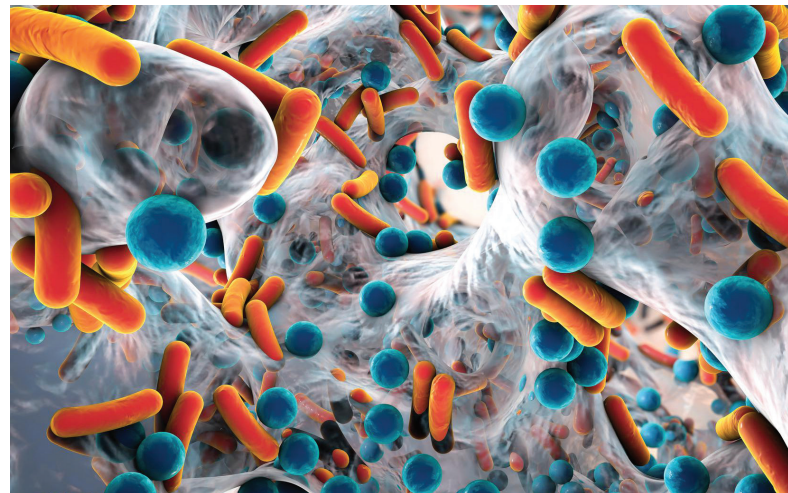
Checking Biofilm

You can check the status of your waterlines by simply disconnecting the waterline and performing a visual check. Ideally select a join within 50 metres of the dispenser.

If present, this is where biofilm growth is likely to be most visible. It is generally an opaque or brownish jelly like substance.

Remedy

Chlorination is the recommended method to deal with bacterial and algal biofilm. There are two main chlorination methods. These involve the addition of a chlorine-based product into the waterline.



Note: we have used Ecolab's Product XY12 (sodium hypochlorite) in this example. Alternative products such as FIL's Graderite are also available.



METHOD 1: **'CONTINUOUS' CHLORINE TREATMENT**

Maintain a continuous level of residual chlorine in the water of at least 0.3ppm (0.3mg/L), but no greater than 0.6ppm (0.6mg/L). This can be achieved by including XY12 to the dispenser solution tank on a daily basis at a rate of 25ml /1000 litres water consumed daily, and no greater than 50ml /1000 litres consumed daily.

This is a low-level treatment that enables the water to remain drinkable. It provides chlorine levels well within that of town water supplies¹ and is safe for the herd to drink. It may only be required one month on, one month off – monitor the biofilm situation to decide on an appropriate treatment interval.



METHOD 2: 'SHOCK DOSE' TREATMENT

- 1 Choose a day and time of day when herd water consumption is lower.
- 2 Tie off ballcock(s) in paddock(s) containing livestock.
- 3 Open ballcock at far end of main water line.
- 4 Add approx 10 litres of XY12 with approx 10 litres water into a 20 litre bucket. Position the bucket such that the dispenser intake is drawing from this container.
- 5 Adjust Dispenser setting to 2%. This will mean that the 20 litres of XY12 water mixture will be dispensed into 1000 litres of water through the main line. This is sufficient for 800m of 40mm waterline. Particularly large mainlines (either length or diameter of line) may require additional volumes. If this is the case you will need to increase the quantity of XY12 and water accordingly.
- 6 Hold this in the line for 1 – 2 hours either by shutting off the ballcock or switching off the pump.
- 7 Thoroughly rinse out main line with fresh water by opening the ballcock and letting new clean water run through the line.

This procedure will neutralize any existing biofilm and enable periodic treatment at the standard "continuous" use rate to keep growth under control. One shock dose treatment per season should be sufficient but you will need to assess this periodically.

If in doubt, please obtain specialist advice on appropriate treatment regimes for your situation.

Rumensin Max

Rumensin Max has been purpose-designed for in-line water dispenser systems. Like many additives it may contribute to biofilm growth, however it is only one of the many factors that are involved.



This product must not be used for growth promotion in cattle intended for human consumption. Always refer to registered product label for full information

Reference: 1. Wellington Regional Council Water Quality webpages <http://www.gw.govt.nz/chlorine-2/>. Elanco™, Rumensin™ and the diagonal colour bar are trademarks of Elanco or its affiliates. © 2018 Elanco or its affiliates. Rumensin Max is registered to Elanco Animal Health, a Division of Eli Lilly and Company (NZ) Limited, Level 1, 123 Ormiston Road, Botany Junction, Auckland 2016, pursuant to the ACVM Act 1997, No. A9107. XY-12 is a trademark of Ecolab USA Inc. Graderite is a trademark of Farmers Industries (NZ) Ltd. AC-E0031 NZDRYRUM00067

Elanco Helpline

Elanco is ready to answer your questions about water quality and the Rumensin range of products. For more information call Elanco on **0800 ELANCO (352 626)**, talk with your Veterinarian or Farm Source store or visit our website.

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