



Credence Summary

The animal safe and effective water sanitiser and disinfectant.

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Water is the number one nutrient for all animals. Whilst it is possible to live for many days without food, dehydration rapidly kills. Water quality is often forgotten as a key part of animal nutrition, whereas a great deal of time and money is spent ensuring that feed materials are not contaminated with pathogenic (disease-causing) organisms. Toxin producing micro-organisms are found in most rural water supplies, especially from bore holes, rivers and roof-collection tanks. Even in treated (e.g. 'town') water, troughs still become contaminated over time from plant or faecal material and soil. When pathogenic micro-organisms are consumed by animals, they enter the gut where they can multiply rapidly. Once established, they produce toxins as a natural result of their own metabolism, which damages the cells lining the gut leading to diarrhoea, colic and even death. The blue-green algae that are commonly seen in dams and troughs release neurotoxins which cause paralysis and severe physiological issues, and can be fatal.

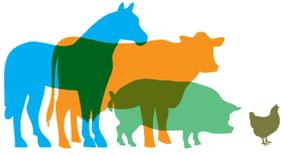
Because of the mild climate in New Zealand, pathogenic organisms multiply rapidly in water systems, and can be an underlying cause of diseases and ailments. Many farms have dams and concrete water troughs which are impossible to clean properly, and remain a reservoir of infection for the animals using them. In addition, dogs and children exposed to contaminated water from dams are at high risk of ingesting toxins from algae and bacteria from faecal contamination, especially during warm seasons which are favourable for their growth. New Zealand surveys have shown that water from roof collection or bore holes are highly susceptible to contamination from organisms that cause gastroenteritis.



Credence is a highly efficacious sanitiser product which has long persistency and can be used in all drinking water systems to keep them clear of such threats. It is far cheaper, more effective and less corrosive than other 'cleaners' used on farms. For example, some farmers use copper sulphate ('blue crystals') based blocks to treat their large concrete water troughs. This is a major problem as it overloads the animals with one inorganic form of mineral, compromising their ability to absorb other minerals and leading to deficiencies, which have been associated with broken bones in cattle. Copper is toxic to some species – including sheep, which must be kept away from treated troughs. Treating blue-green algae with copper sulphate stresses the organism which causes a massive 'burst' of toxin production before it dies – which is entirely counter-productive. Credence does not have these issues, as it is based on an active, slow release sodium troclosene compound that generates free available chlorine.

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The long persistency of Credence in water tanks, troughs and dams means that treatment does not need to be done constantly. In trials run in NZ in 2010, Credence in dams was effective in controlling algal growth for up to one year or more. The tablets are stable for more than three years when kept in their screw top containers.

Credence can be used in various concentrations to suit the purpose required. For drinking water, one tablet is needed per 1000 litres (e.g. a large concrete trough). More concentrated forms can be used in the dairy shed, for hand washing, equipment and building cleaning, footbaths and general biosecurity via wheel mats on farm. It has been successfully used on New Zealand research units for cleaning facilities and equipment used for animal feeding trials. The additional benefit is that, unlike other major sanitisers and disinfectants, only simple rinsing is needed as the product is safe to animals and people. Credence is a suitable sanitiser agent for calf and lamb facilities, kennels and catteries, stables, intensive pig and poultry units, dairy farms and general farm and lifestyle equipment, and keeps concrete yards free of slippery algal growth.

Dilution of Credence

Use	Litres per tablet
Biosecurity / Footbaths	5 L
Equipment Washing	10 L
Non-porous	15 L
Hand/Udder Washing	100 L
Water Systems Clean Out	200 L
Drinking Water / Troughs	1000 L





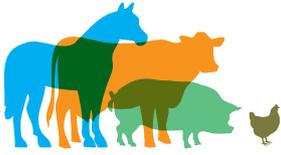
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A comprehensive list of diseases and ailments that Credence sanitiser is effective against.

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Credence is effective against a host of bacteria, protozoa, fungi and algae:

- **Listeria monocytogenes** – Associated with contaminated milk. Harmful to pregnant and young animals.
- **Salmonella** – Causes gastroenteritis in all animals. It invades the gut lining, and some species cause haemorrhage in the gut, leading to death in younger animals such as calves.
- **E. coli** - Causes gastroenteritis in all animals. Associated with faecal contamination. High levels of exposure may be fatal in young and old.
- **Campylobacter jejuni** - Causes severe gastroenteritis. Very common in water systems and troughs in New Zealand.
- **Shigella sonnei** – Causes dysentery transmitted by infected water. Found in faecal material and invades cells lining the gut.
- **Staphylococcus aureus** – General infective agent causing disease in the respiratory tract, organs and wounds, including cellulitis, skin diseases/impetigo, abscesses, pneumonia, meningitis, osteomyelitis, endocarditis, toxic shock syndrome and sepsis.
- **Streptococcus dysgalactiae** – Major cause of mastitis on udders and teats, and causes joint inflammation (joint-ill) and meningitis.
- **Klebsiella pneumonia** – Causes respiratory infections including pneumonia, gut and skin infections, fever and mental confusion.
- **Leptospira interrogans ser.lcterohaemorrhagiae** – Weil's disease. Invades via skin injury or ingestion and causes fever and flu-like symptoms, with renal and hepatic failure. Major risk for dogs.
- **Yersinia enterocolitica** – Widespread in faecal material and water. Causes appendicitis-like symptoms as well as liver and spleen abscesses. Yersinia acts in concert with other pathogenic bacteria to cause bloat in ruminants. Last outbreak in humans in NZ September 2014.
- **Faecal coliforms** – Pathogenic organisms from faecal material which cause gastroenteritis of varying severity.
- **Pseudomonas aeruginosa** – Present in soil and water. Thrives on equipment. Infections affect lungs, urinary tract and kidneys and can be fatal. Secretes pigments and fluorescing material (e.g. the sheen on gone-off bacon). Causes necrosis in wounds, gastrointestinal infections, pneumonia and septic shock/gangrene. Lethal toxins in gut are triggered in low phosphate conditions (unbalanced feeds).
- **Clostridium** – Responsible for a host of wound infections and gastroenteritis, including necrotic enteritis which destroys the gut lining.
- **Giardia lamblia** – Protozoan parasite common in NZ from infected water leading to severe enteritis. Characterised by 'explosive diarrhoea', flatulence, bloating and abdominal pain.



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- **Aspergillus** – Fungus found on equipment and damp walls. Causes serious problems e.g. respiratory disease, fever and lung damage.
- **Cladosporium** - Fungus causing respiratory disease, especially in animals housed in poorly ventilated conditions.
- **Citrobacter freundii** - Found in soil, water, faecal material and food. It infects the respiratory and urinary tract, and leads to blood and intestinal disorders, brain abscesses and meningitis.
- **Aeromonas hydrophila** - A major pathogen in warmer climates which is resistant to antibiotics. Causes gastroenteritis in mammals, especially in younger animals, with symptoms similar to cholera (bloody diarrhoea), as well as necrotising fasciitis.
- **Avian influenza virus** – Responsible for major outbreaks of disease with high mortality. Can be transmitted to humans.
- **Rotavirus** – Major pathogen in young animals, e.g. causes fatal scours in calves. Typically harboured in unclean housing and equipment.
- **Toxic cyanobacteria (blue green algae)** – Produces neurotoxins (attack the nervous system), cytotoxins (cellular death), endotoxins (causing skin rashes, allergic-type reactions, gastrointestinal and respiratory disease) and hepatotoxins (liver damage).

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