

D IS FOR DISINFECTION

by Dr Joséphine Verhaeghe

Disinfection on a dairy farm: who needs it? You do! Cleaning and disinfection are imperative to maintain the health of production animals, especially in modern housing where high density and high productivity increase infection pressure. Thorough cleaning and adapted disinfection allow producers to decrease the pathogens level and prevent or break the disease cycle.



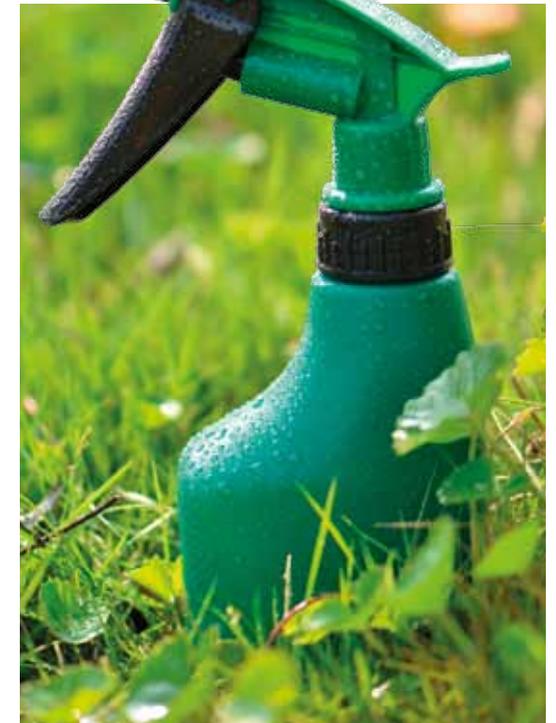
The myth of the ideal disinfectant

The ideal disinfectant:

- has a spectrum adapted to the target
- is fast-acting
- has sufficient efficiency within the contact time
- remains active in the presence of organic matter
- has a good material compatibility
- has no or low toxicity for users
- has an acceptable ecotoxicity
- has an easy protocol of application.

The usual list of disinfectants includes iodine, chlorine, glutaraldehyde, phenolic or quaternary ammoniums compounds, none of which meet all the above requirements.

Complex formulations with several active substances and stabilisers, sequestering and buffering agents offer the best compromise. The chemical properties of the disinfectant and method of application form the basis of obtaining good results. Following the directions is essential to ensure optimal potential of the disinfectant.



GENERAL DISINFECTION ON THE FARM

Housing hygiene

Unlike some livestock systems, the dairy farm does not have the luxury of an all-in, all-out stocking policy. However, it is possible to disinfect individual buildings to reduce infection pressure. Remove all bedding and equipment before soaking and cleaning, and apply a broad-spectrum disinfectant.

Milking parlour hygiene

Twice per day, the milking parlour is a high-density area; therefore, clean the surfaces daily to avoid multiplication of pathogens. Rinse the milking parlour with water after each milking, and clean and disinfect the area once a week.

Calf-housing hygiene

Calves need the best possible start in life, and therefore the best possible care at calving to ensure a good profitable lactation. Calf pneumonia and scours can become a huge expense in terms of losses in deaths, reduced feed conversion, poor growth and treatment.

Focusing on neonatal calf diarrhoea (NCD), the most critical period is in the first few days following birth. Pathogens responsible for NCD can be viruses, bacteria or parasites. The disinfectant used for calf-housing disinfection must cover those three types of pathogens. The best programme is to clean and disinfect before animals enter and manage this section of the farm as an all-in/all-out system.

Calves need the best possible start in life, and cows need the best possible care at calving to ensure a good profitable lactation.

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Welcome to the real world

A disinfectant consists of chemicals that react with organic matter. Rough, porous surfaces are harder to disinfect than smooth surfaces. On a dairy farm, sources of contamination include the environment, the milking machine, the farmer and the animals themselves.

The best disinfectant for each specific situation is chosen according to the following questions:

1. Against which germs am I disinfecting? Know your enemy before the fight!
2. Where and which surfaces have to be disinfected? The disinfectant should be adapted to the surface in question and the level of organic matter present.
3. How and how often should I disinfect?

Milking machine hygiene

The milking machine can cause infection and therefore requires a strict disinfecting protocol. It must be cleaned after each milking with an acid or

an alkaline. A chlorinated alkaline is often used for this purpose as well as peracetic acid combined with hydrogen peroxide.

Human hygiene

As farmers' hands come directly in contact with animals and equipment, therefore, hand hygiene is directly involved in pathogen transmission. Recommendations for milking hygiene include:

- Wash your hands before each milking, using a cleaning and decontaminating soap.
- Wear gloves to avoid transmission of pathogens.
- Use a disinfecting alcohol solution certified for agriculture and the food processing industry.

A bootbath disinfectant must disinfect speedily and have broad-spectrum efficacy. Disinfectants with

“The critical characteristics required from a disinfectant for boot hygiene are speed of disinfection and broad-spectrum efficacy.”



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Tel. 082 829 4284 Darren Hutcheson, New Equipment Sales
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hydrogen peroxide and peracetic acid bases are ideal for this purpose.

Apply these recommendations when going from one group of animals to another and when people from outside enter the farm.

Animal hygiene

The three main diseases with major economic incidence are mastitis, infertility and lameness, of which two have infectious components. Thus, using an adapted disinfectant for teat hygiene and hoof hygiene is essential to control these diseases and ensure farm profitability.

“ The foaming dip cup is even better: no water is applied on the udder; therefore, there is no dissemination of the dirt.”

Teat hygiene

There are three dangerous periods when cows are more vulnerable to mastitis-causing agents:

1. During milking, the milking machine can cause contamination between cows and even udder quarters. Sanitising the teats before milking is essential to reduce infection risk. Premilking preparation can take on different forms. Spray the teats with a detergent and disinfecting solution and dry them with a paper towel. The foaming dip cup is even better: no water is applied on the udder; therefore, there is no dissemination of the dirt.
2. After milking, the risk of contamination is high because the teat sphincter can stay open for up to two hours after milking. Dipping products allow better coverage and longer contact between the teat dip solution and the teat than spray products.
3. During the dry period, it is important to keep dry cow pens as clean as possible.

Hoof hygiene

Lameness is the third-most important problem on modern dairy farms. The challenge of hoof disinfection is to find a disinfectant that remains efficient in heavily contaminated solutions. The disinfectant should also reach the bacteria deep in the tissue. Footbaths, hoof mats and foaming systems are essential to control the disease.



DR JOSÉPHINE VERHAEGHE

completed a DVM degree in 2005 at ENVT (Ecole nationale Vétérinaire de Toulouse, France). She now leads the international mastitis management programme at CID LINES and although she is based in Belgium, she spends most of her time abroad in Asia, Europe, Middle East and Africa. Contact her at Josephine.Verhaeghe@cidlines.com for more information.