How to choose the best teat disinfectant for your herd

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Summary

- It is important to consider the type of disinfectant along with the specific bacteria causing the infection issue on the farm.
- If disinfecting teats prior to milking always dry teats with paper before cluster attachment.
- Products should be used as recommended by the manufacturer.

Introduction

Teat disinfection is an important part of a mastitis control programme to help reduce the challenge from bacteria, promote good skin condition and produce high-quality milk. The use of post-milking disinfection has been found to reduce new intramammary infections caused by contagious pathogens by at least 50%. Teagasc research has shown staphylococcal bacteria account for 49% of all bacteria on teat skin, followed by streptococcal bacteria (36%) and coliform bacteria (i.e. *E. coli*) (15%).

Evaluation of teat disinfectant products

Teagasc studies have evaluated approximately 100 teat disinfectant products commercially available on the Irish market against mastitis-causing bacteria (*Staphylococcus aureus*, *Streptococcus uberis* and *Escherichia coli*). Some of the main disinfectant ingredients incorporated in products are iodine, chlorhexidine gluconate, chlorine dioxide and lactic acid, with many combinations of these ingredients. Teagasc research will further evaluate these products when applied to cow's teats. Initial results (Figure 1) from testing these teat disinfectant products within the laboratory (tested using the disc diffusion method which determines bacterial inhibition of the product by measuring zones of inhibition in millimetres [mm]) have shown:

- Chlorine dioxide (CD) products were the most effective against *Staph. Aureus*.
- Products which contained iodine combined with lactic acid (IO & LA) had high level of kill against *Strep. Uberis*.
- Chlorhexidine products were the most effective against *E. coli*.
- When all bacteria were considered, products containing chlorhexidine (CH) or a lactic acid and chlorhexidine (LA & CH) combination were found to be most effective.

Results also showed that *Strep. Uberis* was the most sensitive bacteria to the teat disinfectant products, whereas *E. coli* was the most resistant.

Overall, products containing chlorhexidine were the most effective against bacterial strains tested. It is important to consider the type of disinfectant along with the specific bacteria causing the infection issue on the farm. Teat disinfectant products may react differently when applied to teats and in the presence of organic matter. Further studies will be conducted on these products to measure the impact of applying disinfectants to teat skin.

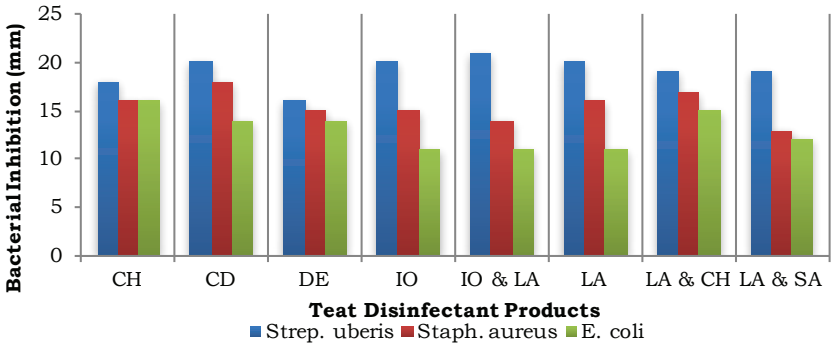

Figure 1. *Bacterial inhibition (in mm) of products grouped by active ingredient against Staph. Aureus, Strep. Uberis and E. Coli (The most effective teat disinfectant product will have the greatest level of bacterial inhibition (mm)). CD = Chlorine Dioxide, CH = Chlorhexidine, DE = Diamine, IO = Iodine, LA = Lactic Acid, SA = Salicylic Acid*

Conclusions

- Refer to the list of teat disinfectant products on the market, which can be viewed on the on Teagasc website (https://www.teagasc.ie/animals/dairy/milk-quality/)
- Check if product is registered. The product will have either a PCS or IMB number on the drum label. This is important for cross compliance checks.
- Use products as recommended by the manufacturer/drum label. i.e. if pre-milking disinfecting, ensure product is recommended for both pre- and post-milking disinfection.
- Ensure the product is correctly diluted as recommended by the manufacturer. If there are any farm water supply issues with regard to water hardness, bacteria and/or pH then ready-to-use products should be considered as opposed to those that require dilution.
- Avoid adding additional emollients as this may have a negative impact on product efficacy.
- Take care when using iodine products and do not use iodine as a pre-milking disinfectant. Iodine products can lead to increased iodine levels in milk.
- Never disinfect teats pre-milking without drying teats with paper. This will reduce the possibility of residues entering the food chain.
- Store teat disinfectants in a cool dry area and do not allow disinfectants to freeze.