

# Mastitis control: an ongoing and evolving challenge

**Despite the widespread implementation of mastitis control strategies, mastitis remains a major challenge to the worldwide dairy industry, writes Alistair Couper BVMS MRCVS, technical and marketing manager, ruminant, Hipra UK & Ireland**

The dairy industry has seen many changes in the past 40 years. One of these has been a dramatic decrease in clinical mastitis incidence, but this has been accompanied by a change in the relative and absolute importance of different pathogens.

With the use of blanket dry-cow antibiotic therapy, along with improvements in milking routine and management, we have seen a reduction in contagious pathogens that are spread from cow to cow during milking, such as *Staphylococcus aureus*, and an increase in environmental pathogens, such as *Escherichia coli* and *Streptococcus uberis*, which are now the two most common causes of bovine mastitis and are an increasing problem in low somatic cell count (SCC) herds.

Our efforts to control these environmental mastitis pathogens have not been helped by the general trend towards larger herd sizes, with increasing cow numbers being cared for by fewer stockpersons.

Stocking densities have also increased, with more cows sharing the same space, resulting in an increased challenge to maintain the ideal clean and healthy cow environment. The change in the relative importance of mastitis pathogens, from contagious to environmental, has led us to a change in the focus of mastitis control.

With contagious pathogens, such as *S aureus*, which are spread from cow to cow during the milking process, the focus was always on correct milking routine and hygiene during and after milking to reduce the spread of these pathogens. With environmental pathogens, such as *E coli* and *S uberis*, the focus needs to be on the environment, and particularly, management during the dry period.

Most clinical cases of environmental mastitis occur in the first month of lactation and are a result of infections picked up during the dry period.

Correct management of the cow during the dry period has become of vital importance on modern dairy farms, not only for mastitis control, but also to impact on other problems, such as ketosis, negative-energy balance, fatty liver, displaced stomachs, etc. As part of our approach to dry-cow management, we have also had to drastically alter our approach to dry-cow therapy.

## DIFFERENT APPROACHES TO ANTIBIOTIC THERAPY

For the past 50 years, blanket dry-cow antibiotic therapy has been recommended. This is where every cow receives

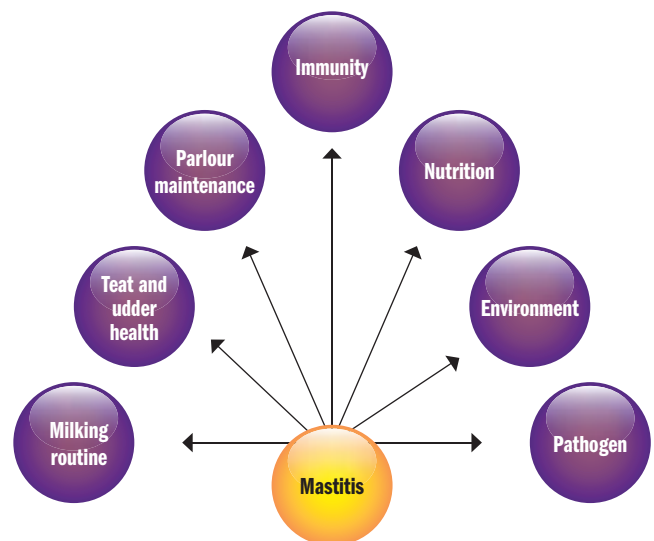
antibiotic treatment at dry-off to cure existing infections and minimise new ones happening during the dry period.

With our increasing knowledge and awareness of the problems of antimicrobial resistance (AMR) and a need to reduce the unnecessary use of antimicrobials in food-producing animals, we have seen a switch from blanket to selective dry-cow therapy, where only cows with evidence of infection in their udder at dry-off, receive antibiotics.

The reduced use of antibiotics has been supported by the widespread use of internal teat sealants at dry off to provide a physical barrier, preventing infection from entering the udder through the teat canal during the dry period.

More recently, vaccines have been developed to boost the cow's immunity to mastitis pathogens and reduce the risk of mastitis. The vaccine currently available can be used to reduce the prevalence of the contagious pathogen *S aureus* and the severity of clinical mastitis caused by the environmental pathogen, *E coli*.

Controlling mastitis requires a multifactorial approach and no single control measure will work in isolation (see Figure 1). Care must be given to dry-cow management reducing stocking densities in the dry-cow sheds, using teat sealants and vaccines to minimise the risk of new infections and also during lactation, ensuring clean, dry beds, good milking routine and hygiene, and also a well-maintained parlour.



**Figure 1: Mastitis wheel.**