UDDER HEALTH MANAGEMENT IN THE DRY PERIOD

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Among dairy herd production disorders, mastitis is responsible for the largest disease-related economic losses for being wide-spread (Volling et al. 2005; Halasa et al. 2009). In addition, the largest share of antibiotic consumption on a farm is due to this infection. As any other infection, mastitis occurs when pathogens encounter cows with an impaired homoeostasis (state of physiological equilibrium). Routinely, the pathogens enter the udder by the teat canal and colonize different portions of the parenchyma. Since there are many different pathogens capable of producing an infection and many ways to achieve this impaired homoeostasis, the mastitis situation varies greatly among farms. Thus, mastitis is a factor diseases, i.e., not only the presence of mastitis pathogens is necessary for the onset of the infection, but also a lot of other factors are essential for the development of the disease. All this shows that in order to mitigate a mastitis problem, herd-individual approaches are mandatory.

The treatment of udder infections – regardless the kind of the therapeutic used – is understood as a mere support for the self-cure. This means that in those phases in a cow's life which are characterized by a relatively low immune status, the success to cure from mastitis even with treatment is improbable. To give an example, it was observed that the highest cure rates (up to 90%; self-cure and cure by treatment likewise) occurred during the dry period. Simultaneously the first and the last week of the dry period are special risk phases for new infections.

Existing infections and subclinical mastitis cases can be cured, but new infections can appear which are of great importance for clinical mastitis in the following lactation. This contribution deals with a systematic approach to identify the herd situation and to choose the right concept of preventive and therapeutic measures.

In dairy farms with mastitis problems due to cow-associated pathogens (S. *aureus*, *Sc. agalactiae*), the risk for new infections is reduced massively when the individual milking process stops. Here the dry period serves as a time of cure. Dairy farms with mastitis cases due to *Sc. uberis* or coliforms/*E. coli* see very often an increase of new infections when the cows are in the dry period. There are typically two periods of high new infection in the dry period – at the beginning and at the end. Dry cow antibiotics are able to reduce new infection risks at the beginning but mostly they are not able to reduce mastitis risks at the end of the dry period. Here the use of internal teat sealers can be useful. To identify the problem on herd level there is a need to know the most prevalent mastitis organisms on herd level and to check the data of the milk recording. By comparing the latest cow individual somatic cell count before dry-off and after calving on single animal level it is easy to calculate the cure rate (% of cows which had a somatic cell count (SCC) at dry off > 100,000 cells/ml and a SCC after calving < 100,000 cells/ml from all cows with SCC at dry off > 100,000 cells/ml) and the new infection rate in the dry period (% of cows which had a somatic cell count (SCC) at dry off < 100,000 cells/ml and a SCC after calving > 100,000 cells/ml from all cows with SCC at dry off < 100,000 cells/ml). Typical risk factors for a low cure rate in the dry period are e.g. too many uncurable cows in the herd, no or no optimal antibiotic dry cow treatment, a high new infection rate in the dry period. Typical risk factors for a high new infection rate in the dry period are bad hygienic conditions in the barn, high animal density, high milk yield at dry-off, no internal teat sealer.

Based on these key figures the veterinarian is able to recommend the most effective strategy to improve udder health in the dry period.