

021 Heifer mastitis: it takes money

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Introduction: Mastitis is one of the most costly diseases in dairy industry (1). Mastitis problems don't only occur in older lactating cows, heifer mastitis is also a well-known problem. Heifer mastitis potentially causes economic losses, caused by an elevated somatic cell count (SCC) at calving, and subclinical and/or clinical mastitis cases throughout lactation, which result in a decreased milk production, treatment costs, culling costs, and extra labour. Currently no data are available on the costs of heifer mastitis from scientific literature, besides some prepartum treatment effects (3). In this study we try to summarize the economics of heifer mastitis and calculate the costs associated with an elevated SCC at calving, and clinical and subclinical mastitis cases throughout lactation.

Materials and Methods: A tool, developed for farm specific calculations of mastitis in general (2), is used as base for the calculations for heifer mastitis. The calculation rules of this tool are converted into a stochastic model, in which the variation and uncertainty of heifer mastitis are taken into account. Input data like probabilities for infection (P_i), milk production losses (P_r), veterinary costs (V_e), cost of treatment and drugs (T_r), labour (L_a), losses associated with discarding milk (D_i) and culling (C_u) are based on literature search. The model consists of 2 parts. In the first part the dynamics of infection are simulated for elevated SCC at calving, subclinical, and clinical infections during lactation. In the second part the economic parameters are linked to the first part of the model and the total costs, costs per case, and costs per heifer present per farm are calculated. Figure 1 shows a graphical representation of the model.

Results: Using default values, the costs of heifers with an elevated SCC at calving are €17/heifer on average present on a farm (€0 - €185), consisting mostly of culling costs (€12) and production losses (€4). The cost of a clinical heifer mastitis case is on average €209, with production losses (€68), discarded milk (€17), and culling (€118) being the most important factors. This results in €14/heifer on average present on a farm (€0 - €180). The costs of subclinical mastitis are €25/heifer on average present on a farm (€0 - €250). These costs consist mostly of culling (€20), and production losses (€3). This results in total costs (elevated SCC at calving, clinical and subclinical infections) of €55/heifer on average present on a farm (€1 - €321).

Conclusion: Under default circumstances, the costs of heifer mastitis are €55/heifer present on an average farm with 15 heifers. The variation in these costs is very large (€1 - €321) and exists both within a farm and between farms. In the current approach long term effects are not taken into account, implying the total costs of heifer mastitis might be underestimated. Additionally, it's important to know which part of these costs can be prevented. If we know the costs that can be prevented, this can be implemented in the advice and the farm management.

References:

- 1 Halasa et al. (2007). Economic effects of bovine mastitis and mastitis management: A review. *Vet. Quart.* 29: 18-31
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- 3 Oliver et al. (2003). Prepartum antibiotic treatment of heifers: Milk production, milk quality and economic benefit. *J. Dairy Sci.* 86: 1187-1193.

Figure 1: Graphical representation of the model