Economics of an intensified monitoring and treatment strategy against clinical mastitis
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Mastitis is of great economic importance due to its effect on milk production, culling risk and treatments costs. The frequency of mastitis treatments is often used as a measure for udder health in a herd. Farmers typically have different criteria for treating cows which makes it difficult to compare the health status between herds and evaluate the efficacy of different treatment strategies. The aim of this study was to simulate the consequences of an intensified treatment strategy against mastitis. SimHerd, a dynamic and mechanistic Monte Carlo simulation model of a dairy herd including young stock, was used to study two different treatment strategies. In the low threshold strategy (intensive treatment strategy) all clinical symptoms of mastitis were treated. In the high threshold strategy mild cases were not treated unless they developed into severely inflamed quarters. The clinical mastitis cases were classified according to severity. The distribution among mild, moderate, severe and chronic cases was 0.0, 0.50, 0.25 and 0.25 in the high threshold strategy and 0.75, 0.25, 0.0 and 0.0 in the low threshold strategy. Compared to low threshold, only 25% of all mastitis cases were treated in the high threshold strategy. By simulating, among other effects, that mild and severe cases of mastitis reduce milk yield by 50% and 250% compared to a moderate case and by assuming that chronic cases of mastitis reduce milk yield capacity for life, by 15% the technical and economic effects of the two strategies were evaluated for an average Danish dairy herd. For the low threshold strategy, compared to high threshold, the simulation model found a higher milk yield of 391 kg ECM per cow-year, a 20% reduction in cow mortality, a 30,000 lower bulk tank somatic cell count but also €4,700 higher treatment costs in a 200 cow herd. Despite the higher treatment costs the contribution margin per cow-year was in total €85 higher for the low compared to the high threshold strategy.