Effect of transition diseases on early culling in dairy cows under pasture based systems

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High rates of involuntary culling and diseases in early lactation are costly and indicative of poor animal welfare. The aim of this study was to evaluate the influence of illness after calving on the culling rate in early lactation cows housed under pasture based systems.

Data were collected during the late autumn and spring calving season from April to November of 2016 on 32 dairy farms in the southern Chile (n=7,768 cows). Average herd size was 323 ± 121 (±SD) with milk production averaging 7,347 ± 1,672 kg/lactation (±SD). Disease and culling data (slaughter/death) were extracted from the on-farm computer herd management software system. Only post calving diseases that were consistently recorded across herds were considered; disorders considered were dystocia, retained placenta, mastitis, metritis, milk fever and lameness. Cows were subsequently categorized into 2 health categories: (1) no record of any disorder (healthy cows); or (2) one or more disorders (sick cows). Data were exported to R (version 3.4.1.) and survival over the course of the study was measured as the time from calving until death or sale.

Overall, 19.5% of the cows studied developed at least one clinical disease in the 4 wk post calving and the average culling rate at 100 days in milk was 3.9%. Mean and median number of lactations of cows at culling was 3.5 ± 2.2 (±SD) and 3 lactations, respectively. Cows that developed clinical diseases in the transition period have 2.06 increased odds of being culling in early lactation, with an interval of 1.61 to 2.64 ($p < 0.001$). Survival decreased at a faster rate for those cows that were identified as sick. Of those cows that were diagnosed as sick only 65.7% remained on the farm 100 days post partum compared to 82.2% identified as healthy ($p < 0.001$). Our results are the first to show the effect of transition diseases on cull status in cows under pasture-based Chilean farms.