



Event Montreal (CA), ICAR 2022 Annual Conference
Subject Abstract presented manuscript as ORAL presentation

Title of the presentation
Using dairy herd improvement data to monitor herd sustainability

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Session:

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ABSTRACT

Milk recording data have the potential to provide a dynamic picture of the overall herd status and management practices. We developed a dairy management tool to assess and monitor herd sustainability based on 10 routinely collected DHI indicators linked to key aspects of dairy management over the life span of a dairy cow. The indicators were selected by a committee of dairy industry experts and are related to longevity and culling (% cows in lactation ≥ 3 ; involuntary culling; cow mortality), feeding and production (% cows with milk urea nitrogen < 5 or > 18 mg/dL; Transition Cow Index; a management score index to evaluate how well the genetic potential of cows to produce milk is expressed), heifer management (calf mortality; age at first calving), and health (% cows with BHB > 0.20 mM at first test; % cows with subclinical mastitis as SCC $> 200,000$) at herd level (12-month rolling averages except for early lactation). Indicators were aggregated to a composite herd sustainability index (SI) and aimed to benchmark the overall herd sustainability of a herd relative to its peers and highlight specific areas with opportunities for improvements. The herd SI and benchmarks are computed three times per year and made available to dairy producers and advisor services via customized reports. Preliminary analyses were conducted with 2,608 dairy herds across Quebec and New Brunswick, Canada, to validate the herd SI with herd performance and profitability (12-month test date averages for 2020), and farm management practices collected through an online survey in 2020. Overall, with increasing herd SI, the herd performance improved for production (+8.9 kg/cow and day; top 10% versus bottom 10% herds for all reported results), herd longevity (-36% involuntary culling and -74% cow mortality), heifer management (-62% calf mortality), reproduction (-36 days open and -37 days for calving interval), for health parameters (-51% potential subclinical mastitis; -71% potential hyperketonemia), and herd profitability (+26% milk value and +\$93,810 in operation margin). A descriptive study of association with farm management practices on 2,143 dairy farms highlighted some important aspects of calf, heifer, dry cow, and milking management. In particular, improving the stall surface and housing comfort, colostrum management, ventilation, and udder and hoof health were key aspects to improve the herd SI. In conclusion, milk recording data can be useful to assess and monitor herd sustainability and can help dairy producers adopt best management practices to improve the production performance and herd profitability. :



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