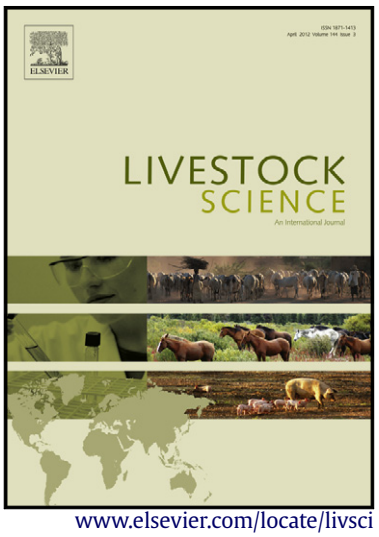

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Short Communication

Lipid mobilization assessment in transition dairy cattle using ultrasound image biomarkers

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ABSTRACT

Excessive lipid mobilization during the transition period of dairy cows predisposes animals to higher disease incidence and reduces lactation performance. Plasma non esterified fatty acids (NEFA) are used as a marker of lipid mobilization intensity to monitor transition cow management and as a disease risk predictor. NEFA evaluation can be complemented by continuous monitoring of adipose tissue depth reductions during the transition period using ultrasound images of the retroperitoneal (RPAT) and subcutaneous adipose tissue (BFAT) depots. These image biomarkers are easily obtainable and their real time nature offers an important advantage that could help improve transition cow health programs. The objective of this study was to evaluate the use of both RPAT and BFAT ultrasound measurements as quantitative image biomarkers and its association with plasma NEFA. A longitudinal cohort study evaluated adipose image biomarkers in 44 Holstein cows in a commercial dairy herd. Ultrasound examination and serum samples collection were performed at 4 (dry) and 2-3 (close-up) weeks before expected calving date, and at 1 (calving) and 4 (lactation) weeks