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Body Condition Score in Commercial Dairy Cows

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Abstract

Body condition score (BCS) is a known risk factor for cow health and well-being. Many different BCS scales and systems for assessment exist;while the scales used for assessing BCS vary, differences in how BCS is assessed (i.e., visual versus visual plus tactile) and the extent of training and experience of the assessor (i.e., professional linear classifiers versus producers) also contributes to the underlying variability. Registered dairy cows globally are routinely assessed for linear type traits which describe biological extremes in the morphological attributes; BCS and a correlated trait angularity are within this suite of traits assessed. These lineartype data are used to generate estimates of genetic merit (predicted transmitting ability), but how these estimates manifest themselves as phenotypic differences when assessed by producers on commercial multiparous cows has never been quantified. To evaluate this, 58 440 phenotypic BCS records from 48 823 lactations in 38608 cows were used.

Keywords: Plant clinics; Agricultural extension; Joint health services

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Introduction

The association between PTA for either BCS or angularity with phenotypic BCS (dependent variable) was determined using mixed models with cow lactation included as a random effect in the model, the exception was when the data were limited to the two technicians where a fixed effects model was used as no repeated records existed. Fixed effects included in all models were contemporary group of calving, herd-date of scoring, parity, stage of lactation and the two-way interaction of stageby-parity. BCS or angularity PTA was included as either a continuous or a class effect in all models as well as in two -way interactions with parity and stage of lactation; the three-way interaction between parity, stage of lactation and genetic merit for either BCS or angularity did not improve the fit to the data Colostrum is an important source of nutrients, immunoglobulins and biologically active compounds, such as growth factors. Good colostrum management is critical for calves' health, and colostrum is routinely heat-treated to reduce bacterial contamination. However, heat treatment might impair the function of biologically active compounds that are not heat stable. We analyzed the metabolite profiles in colostrum and in blood serum of calves, and we found that heat treatment affected the concentration of some metabolites in the colostrum [1].

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The study was performed between July and August 2018 on a commercial dairy farm in New York State, USA after obtaining written consent from the owner. Holstein cows were housed indoors year-round in free-stalls and moved to the calving pen following a just-in-time approach. Colostrum from all animals with at least 28 d of dry period length and that were clinically healthy immediately postpartum was eligible for enrollment, as described in [2]. In brief, colostrum of individual cows was harvested into sanitized buckets and gently mixed with a whisk before taking an aliquot to test Brix% on a digital refractometer (Palm Abbe, Misco, Cleveland, OH, USA). Colostrum ≥22% Brix and ≥8 Across all data, the linear regression coefficient of phenotypic BCS on PTA for BCS and angularity was 0.08 (SE = 0.0017) and −0.09 (SE = 0.0021), respectively. The partial correlation between phenotypic BCS (after adjusting for all fixed and random effects in the model except for genetic merit) with PTA for BCS and angularity was 0.13 and −0.10, respectively, both of which differed ($P < 0.001$) from zero. When the data were limited to just the two technicians, the respective linear regression coefficients on PTA for BCS and angularity were 0.10 (SE = 0.0032) and −0.11 (SE = 0.0043). When based on just the two BCS te l total. The paper examines the current state of joint plant-animal health ser-vice delivery through plant clinics in mixed farming areas, to provide aclear understanding of farmers' needs for animal advice and the feasi-bility of integrating plant and animal health services [3].

Using data from a plant doctor survey and stakeholder consultation, the paper suggestsways to investigate how agricultural support services can be more integrated across the plant, animal, and human divides to improve thehealth and livelihoods of rural communities [4].

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