

Factors for standardizing lactation yields to 305-ME basis in Chile

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Abstract

Current projection factors for milk, fat and protein in use by Cooprinsem since 2008, were developed and evaluated to extend lactations in the range of 175 to 304 days, to estimate 305 days productions. The study considers more than 1.2 millions of milk testing, between 1997 and 2005, for each variable and number of calving, age at calving, season of calving, region of the country and breed of cows. It was defined four groups of region-breed, including Southern-Holstein, Southern-Overo Colorado, Central Southern-Holstein and Central-Holstein. Projection factors considered multiple regression equations involving last production, days in milk and average previous production, for each region-breed, month of calving and number of calving. The model was:

$$Y = b_0 + b_1 \text{ Days} + b_2 \text{ Milk} + b_3 \text{ average Milk} + b_4 \text{ Days}^2 + b_5 \text{ Milk}^2 + b_6 \text{ average milk}^2 + b_7 \text{ Days} * \text{Milk} + b_8 \text{ Days} * \text{average Milk} + b_9 \text{ Milk} * \text{average Milk} + \epsilon$$

A high reliability was obtained from crossing validation ($r > 0.995$; $P < 0.0001$) when factors were evaluated in the same or different groups of animal. Mean absolute error were 3.5 to 5 % at the sixth test-day, for all the variables. Further adjustments to mature-equivalent age (ME) were also calculated for each season of calving, number of calving and region-breed. This analysis considered 186,000 lactations and used univariate mixed animal model. Finally, new adjust factors for first interval days (calving to first milk test) were also estimated.

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