

Analysis of the accuracy of a method for estimating 24-hour fat (percentage and yields) with robots protocols and one single sample

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Summary

The increase in the number of farms using Automatic Milking System (AMS) and the practical difficulties in milk recording, lead to examine ways to adapt and simplify protocols to the realities on the ground. One way consists by using an ICAR Peeters and Galesloot method of estimating 24-hour fat (percentage and yields) with robots based on one single sample (Peeters and Galesloot, 2002). The aim of this study is to analyze the accuracy of this multiple regression model with six factors at two level: on test day record and on lactation. The method was tested for fat percentage and yields from one single sample (the first) unadjusted and adjusted in comparison with a reference 24-hour. The validation study of regression coefficients of the model was done on an independent data set. The accuracy of the model was estimated from a large dataset.

The analysis of the results shows that the correlations are improved using one single sample adjusted instead of one single sample unadjusted compared with a reference 24-hour, respectively 0.786 instead 0.714 for fat percentage and 0.912 instead of 0.852 for fat yields.

Given these results, French Genetics Breeding decided to allow the use of the Peeters and Galesloot method's on robots protocols for all cows with one single sample during the sampling period and use it as estimated 24-hour fat for genetic evaluation.

Keywords: milk recording, robots, 24-hour fat percentage, adjustment