AMS in Germany – AMS in Germany – dataprocessing in milkrecording

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Abstract

During the last twenty years the proportion of automatic milking systems (AMS) in Germany growth to nearly ten percent. The huge amount of data out of AMS is a treasure but also a challenge in data processing for milk recording. For the comparability of daily milk yield and lactation yield between AMS and conventional milk recording in Germany a national guideline for a standard method was adopted in 2003. This guideline includes not only the calculation rules but also the data format in which the data for the data processing must be provided by the manufacturers.

In contrast to conventional milk recording the daily milk yield is not used to calculate a lactation yield. To calculate the lactation yield the sum of all milkings between testdays are used. Ideally at the end of lactation the calculated lactation yield is close to the true performance of the cow. The disadvantage of this method is the huge amount of data which has to be stored. The solution is to divide the interval between two testdays into two equal portions and to calculate for each of them an average (sum of milk in the period divided by time). So only two more averages have to be stored in the database per testday.

For the comparability of daily milkyield with other farms and milking systems it is necessary to calculate a 24-hour-equivalent. Therefor in Germany we calculate an average on the basis of all milkings within 48 hour outgoing from the last recorded sample or milking at the testday per cow.

Our researches have shown that for a representative comparison of ingredients all milking must be examined over a period of 24 hours. Out of this (multiple) samples a weighted (by amount of milk) average is calculated. A major problem of this method is, that the sample taking reduce the number of milkings per day.

To check the quality of data, there are various possibilities. A view parameters which could be stored are: Sum and average milkings per day and at testday, average and standard deviation of time between two milkings (herd and individual cow), first and last individual milking which was delivered, number of failed milkings, milk-production-rate per minute (milkings > 70 g /minute have to be summarized with the following milking of the cow), etc.

Automatic milking systems deliver a huge amount of information for the internal farm management. Some manufacturers offer the possibility to compare the own management characteristics with other farms. Here the question arises why these farms should use the services of milkrecording organizations in the future. Only for milkrecording organizations it is possible to deliver benchmarks (which are regardless from manufacturer) and give the farmer the opportunity to compare his own results in milkyield, healthtraits and fertility with an average or an average of the best farms.

Keywords: Kuwan, automatic milking systems, calculation of milkyield, dataquality check, benchmarking