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From new milk-testing parameters to new DHI services – The view of an instrument manufacturer

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FOSS has a long history in developing analytical solutions and introducing new parameters to the industry. The objective of this study is to provide an overview on the implementation of new milk-testing parameters in practise and how they can become new DHI services that can be offered and utilised by the dairy industry. Specifically, examples on quality assurance as well as the actual practical application for the parameters differential somatic cell count (DSCC), beta hydroxybutyrate (BHB) and acetone (i.e. ketosis screening), and fatty acid profiling, respectively, will be presented.

Mastitis is still the most costly disease in dairy farming. DSCC represents the proportion of specific immune cells (neutrophils (PMN) and lymphocytes vs. macrophages) and thus provides more information about the actual udder health status of dairy cows. The results of a recently concluded study clearly demonstrate that the test performance (i.e. sensitivity) for identification of mastitis increases applying the combination of DSCC and SCC as compared to SCC alone. This, in turn, opens up the possibility to develop new tools for improved management of mastitis such as more targeted mastitis screening as well as selective dry cow therapy, which are both currently tested under practical conditions.

Ketosis is a costly metabolic disorder, which usually occurs in dairy cows during the early lactation period when energy demands for milk production exceed energy intake. Milk BHB and acetone in regularly available DHI samples can be predicted using Fourier transform infrared (FTIR) technology. Quality assurance procedures for ensuring generation of reliable data have been developed and documented. The application of the data is different among DHI laboratories/organisations. While ketosis screening services are based on milk BHB results only in some countries, the data is incorporated in decision trees in other countries.

The milk fatty acid profile contains a lot of information about the processing properties of milk as well as the nutritional status of dairy cows. Various different practical applications and quality assurance tools are used around the world.

In conclusion, milk samples harbour a lot of information and, besides the traditional parameters, new tools as well as services that can be offered to the dairy industry help to increase the value of milk testing. However, dairy farmers and farm advisors are rather in need of meaningful information than in need of raw data. It is therefore clearly in the interest of FOSS to share global experiences on new parameters as well as actively participate and contribute to the development of new milk-testing based DHI services.

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