The unfolding of new analytical concepts – managing expectations, challenges and disappointments

Christian Baumgartner

Milchprüfring Bayern e.V., Germany

Dairy Herd Improvement (DHI) systems traditionally are the backbone of the dairy farming business in terms of delivering the necessary data to manage dairy herds on a rational basis and to improve the genetic performance capability of dairy breeds.

Besides unambiguous identification of individual animals and powerful meters to measure all kinds of parameters for different aspects of performance, the logistics of DHI systems is one of the most powerful and unique tokens of the dairy sector.

DHI milk samples are precious, because a high portion of costs for the whole DHI system is related to the sampling process and to associated logistics. But they are also precious because of the opportunities arising from further investigating this snapshot / fingerprint of the cow´s metabolic state, routinely filled in a vial.

As the objective of DHI systems is changing focus – from improving the cows´ yield to improving their health and comfort and displaying the health status – new analytical concepts are in great demand which try to use the DHI milk samples for establishing new indicators and control parameters for better herd health management. FTIR-spectra, cell differentiation data and sensor data from automated systems surrounding the cow are progressively integrated in new herd management tools using big data approaches. Although such tools are the result of highly complicated statistical procedures and no longer directly linked to single easily accessible traits, these new indicators require as well quality assurance tools (internal controls, reference materials, proficiency testing schemes and reference systems) to secure the validity of the data provided.

This presentation describes the way from the idea of using cell differentiation in routine DHI samples to an application practically useful for herd managers, introducing a new analytical concept in DHI. Highlighting the pitfalls of innovation processes related to different DHI stakeholders it is a story about managing expectations, challenges, achievements and disappointments in the frame of an innovation project.