I⁴ Conference News

IDF/ISO Analytical Week and ICAR/INTERBULL Conference

Issue 2, 22 May 2014

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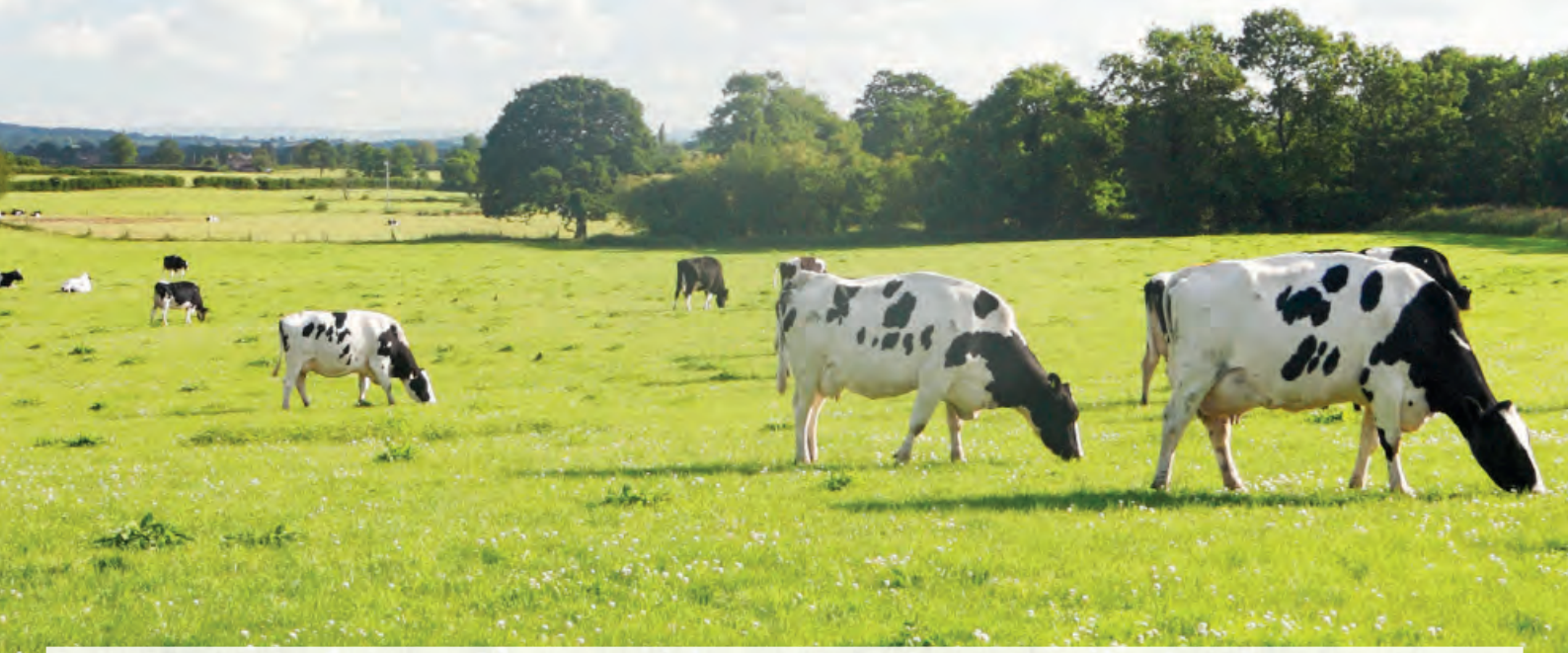

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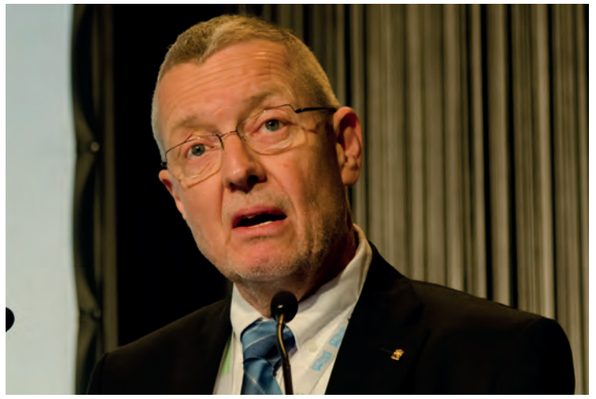
Welcome and Opening

Andrea Rosati (ICAR Secretary General)



Uffe Lauritsen (ICAR President)

Dear Colleagues,
Being few days in Berlin is an experience in itself. Beside the cultural and historical importance of this city, in Berlin there are located many research institutions and, as we can read in the information about this city, here is clearly believed that “alignment and networking of science and industry is the only way to successfully meet the challenges in the global race for know-how and innovation”. Therefore ICAR and the IDF/ISO Analytical Week could not find a more appropriate location for this important event. The Analytical Week is organized every year to support, through technical and business meetings, the standardization of IDF/ISO methods of milk analysis and sampling. ICAR every year organizes a conference to promote the development and improvement of the activities of performance recording and the evaluation of farm livestock.
ICAR, as the world-wide organization for the standardization of animal identification, recording and genetic evaluation, provides information and services to help its member organizations to develop, operate and manage their business. Therefore you will follow in all these days in Berlin sessions promoting benefits of identification, recording and evaluation. Beginning with the plenary session all through the rest of the week participants will be able to take an example of the many services of ICAR: standards for animal industry, technical sessions, exchange of information, networking, technical developments, international genetic evaluation, etc.
And we hope to have an active participation from everyone here in Berlin since the strength of ICAR is made by the expertise and the willingness of the participating organizations and individuals: more than 100 persons who work with enthusiasm and expertise in the technical groups. These days we believe that everyone will have the chance to offer his/her contribution for the common benefit.

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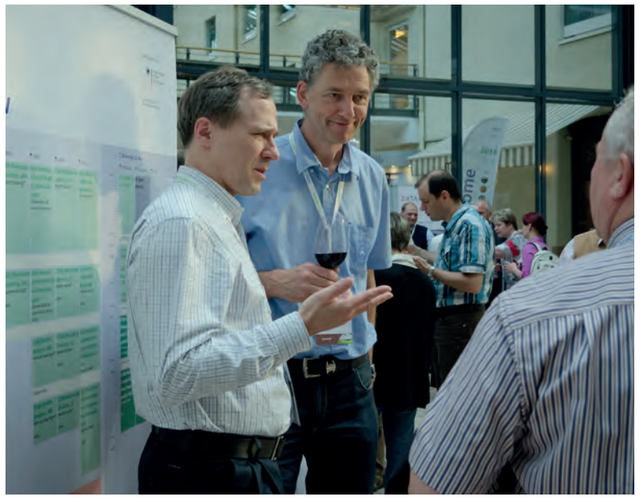

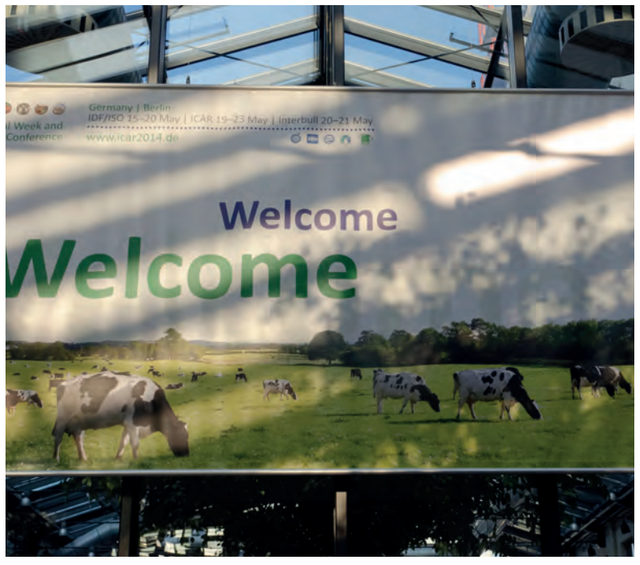

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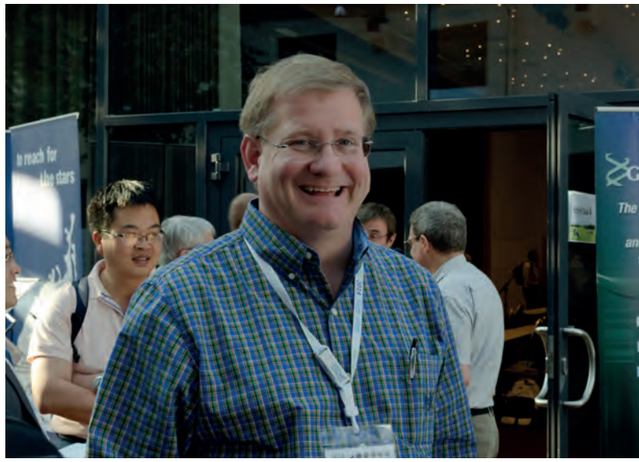
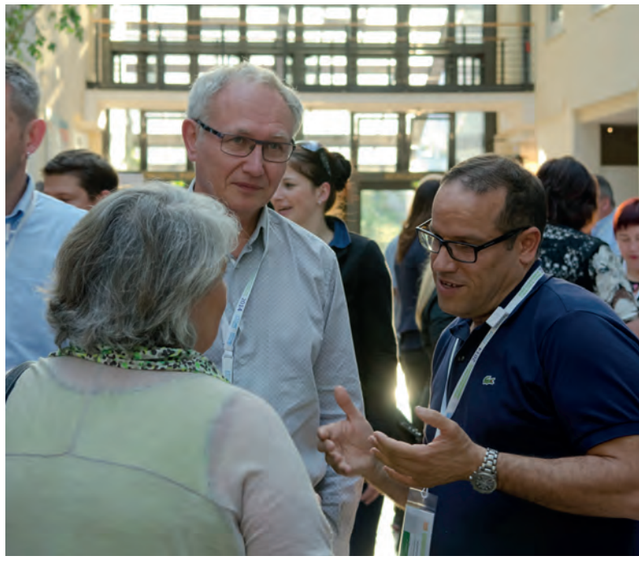
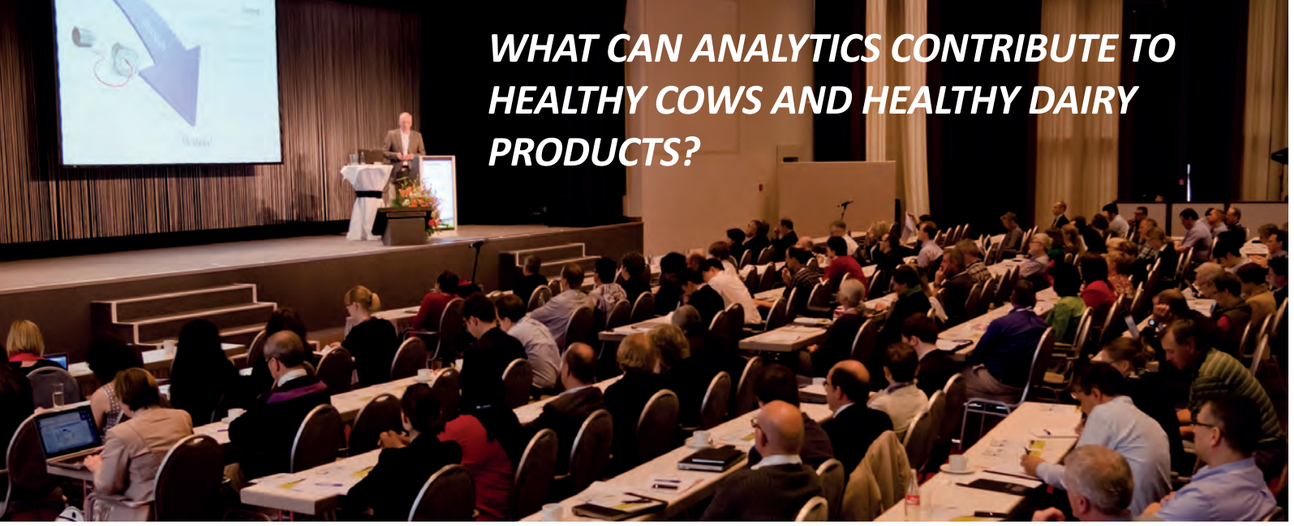






WHAT CAN ANALYTICS CONTRIBUTE TO HEALTHY COWS AND HEALTHY DAIRY PRODUCTS?

IDF/ISO Scientific Symposium, 17 May 2014

The IDF/ISO Scientific Symposium provides a valuable platform to present and discuss the latest developments in the analytical field. Asking the question 'What can analytics contribute to healthy cows and healthy dairy products?' the Symposium highlighted the crucial role of analytics and standardization at various stages of the dairy chain.

The first session provided participants with a clear impression of the potential of methods of analysis and sampling (MAS) to create value for stakeholders. In Jaap Evers' (IDF) presentation, 'The role of dairy analytics today – an IDF perspective,' he explained how MAS function as enablers to safeguard and improve quality, safety, efficiency and ultimately profitability.

The importance of sound data

The Symposium also provided a showcase for the German dairy sector, with Udo Folgart (VDM) and Folkert Onken (DLQ) demonstrating how analytics is embedded in German dairy business. This is not only at farm level, where sound data is used to promote effective and economical farm management decisions, but at a regional and national level, where the programme "milchQplus" collects and evaluates data to improve udder health. The importance of systematically interpreting datasets was then highlighted by Dörte Döpfer (Wisconsin University), who detailed how mathematical models have been used to identify meaningful predictors of disease.

Building an international reference system

In the second session focus turned to a joint project between IDF/ISO and ICAR to build an international reference system for somatic cell counting in raw milk. In global markets with expanding streams of imports and exports, close attention must be paid to the equivalence of analytical results. Somatic cell counting, used to indicate udder health status, is one of the most frequently performed tests worldwide. However, traceability of reported values to a robust global anchor point is lacking.

"Somatic cell counting in relevant in food legislation and payment of raw milk, it affects milk composition and quality and has a major impact on farm management and breeding decisions," explains Harrie van den Bijgaart (IDF/ISO/ICAR), Project Leader.

"The approach differs to other IDF analytical projects, as it is not concerned with just one single analytical method. The reference system is an analytical strategy that will combine all the available data, including those of proficiency testing, to arrive at a better analytical equivalence," he continued.

Engaging with the global dairy community

Launched in 2009, significant progress has already been made, as Silvia Orlandini (IDF/ISO/ICAR) explains: "The Project Group members represent a wide range of dairy stakeholders and areas of expertise. This helps to make our communications to the global dairy community as effective as possible."

Several global surveys were sent out to gather information from almost 400 stakeholders on the realities of their analytical practices. "It was encouraging to see that respondents demonstrated great enthusiasm for the project," commented Silvia. After the responses were analyzed and a strategic plan put in place, a pilot study on a calculation model to assess the laboratories and proficiency testing schemes was also conducted.

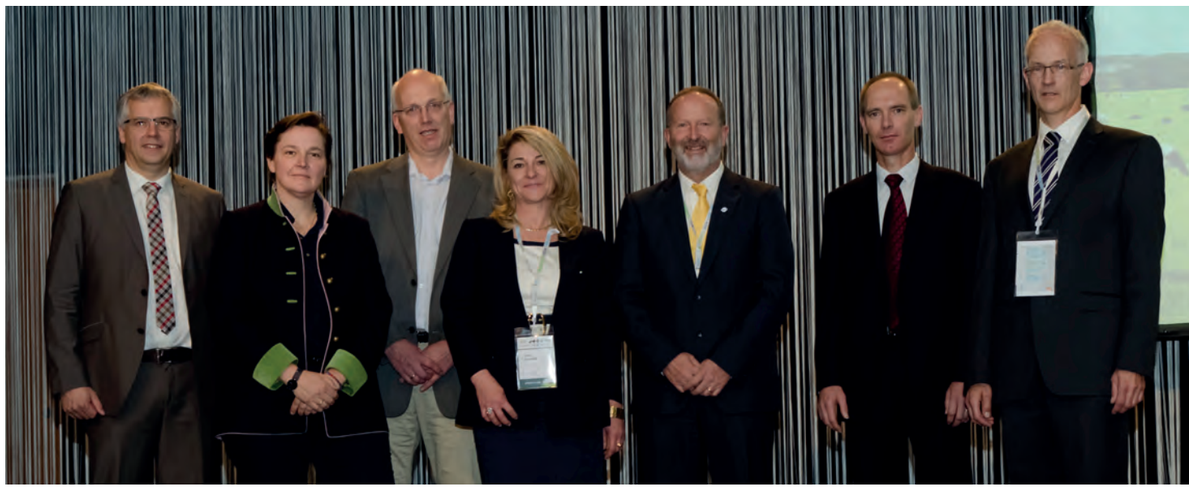
A positive response from the EU JRC/IRMM

"With this knowledge we approached the EU Joint Research Centre Institute for Reference Materials and Measurements (JRC/IRMM) to assess the possibility to produce certified reference material. It was timely that a representative from the EU JRC/IRMM was able to join us here in Berlin, to announce that the EU JRC/IRMM has positively responded to the request of DG SANCO to start work on the production of certified reference materials for somatic cell counting as proposed by the IDF/ICAR Project Group."

The next steps of the project will be to support EU JRC/IRMM with relevant expertise, to complete the calculation model and to prepare a stakeholder map to ensure continued involvement of stakeholders for the implementation phase.

Find out more

Further information about the IDF/ICAR Project Group on Reference System for Somatic Cell Counting in Milk is available at *www.fil-idf.org/RSSCC*



Speakers at the IDF/ISO Symposium: (from left to right) Harrie van den Bijgaart, Dörte Döpfer, Folkert Onken, Silvia Orlandini, Christian Baumgartner, Jaap Evers, Thomas Berger

I⁴ Conference News spoke with Thomas Berger, Agroscope, Institute for Food Sciences, about his presentation on "The implications of statistical tools to evaluate and compare the analytical performance of laboratories" and its impact on the work towards a reference system for somatic cell counting.

Why do we need new statistical tools to compare different laboratories as well as international standards for analytical methods?

There is a standardized routine test method for somatic cell counting, which is used by laboratories to produce data. However, with no internationally agreed reference system, interpretation of this data is problematic. A laboratory could participate in two different proficiency tests (PT) and receive completely different results. New statistical tools were needed to make somatic cell data comparable worldwide.

How are the new statistical tools applied?

The aim is to convert the raw data from inter-laboratory proficiency testing (the parameters of which can vary widely), to a comparable value, or index. We use the probability of a laboratory achieving the assigned value of a specific proficiency testing, together with the probability of it achieving the precision figures as specified by IDF/ISO guidance, to calculate a quality index for each laboratory and PT. The resulting indices will tell us about the capability of laboratories and PT schemes to meet a joint level.

Who was involved in the development process?

The statistics were developed by Werner Luginbühl from ChemStat, while I performed the calculations with the test data. The Project Group involved in the development of a reference system for somatic cell counting critically checked the results. As we are dealing with sensitive data, we are now looking for a neutral body to implement the system.

IDF/ICAR COLLABORATION TO EXTEND TO RECORDING OF FUNCTIONAL TRAITS IN DAIRY CATTLE

IDF and ICAR both recognize the importance of close collaboration between the two organizations in all fields of common interest. It has been agreed to expand the existing IDF/ICAR collaboration with regard to the development of a Reference System for Somatic Cell Counting to the area of functional traits.

The objective of the ICAR working group on functional traits (WGFT) is to provide a portfolio of recommendation sheets on recording, evaluation and genetic improvement for functional traits in dairy cattle. This comprises all traits, except milk production and conformation, which affect the ability of an animal to perform the functions required for it in a profitable farming enterprise. These are: general health, udder health, female and male fertility, calving ease and stillbirth, feet and leg problems, workability, survival and metabolic stress.

The first meeting with IDF participation took place in Berlin on 20 May 2014. It has set the basis for collaboration in terms of IDF inputs to the work through permanent observer participation including regular reporting on IDF activities of potential relevance.

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NEWS FROM IDF STANDING COMMITTEES & ISO/TC34/SC5

Standing Committee on Analytical Methods for Dairy Microorganisms – Quantification of Lactic acid bacteria by flow cytometry

This project aims at obtaining a standard analytical protocol, validated for use in quantification of lactic acid bacteria and probiotic strains in starter cultures and their applications. Dairy sector stakeholders participating in the project include flow cytometry experts, manufacturer and users of starter cultures, research institutions, laboratory services, the association of pharmabiotic product manufacturers and flow cytometry equipment suppliers.

The method includes three individual and independent staining protocols, differing on the target of fluorescent cell staining. The collaborative study was conducted in February-March 2014 and included relevant matrices (yoghurt, frozen and freeze dried starter cultures), and sample types that were tested by 15 laboratories. Equivalence between the three staining protocols was demonstrated. After validation of the statistical figures, the outcome from the collaborative study will be included in the IDF/ISO standard draft before submission for voting in July 2014.

Besides innovative aspects (e.g. new unit of measurement), the outcome of this project will enable assessment of the quality of starter cultures and fermented milk products in a more relevant manner for some applications than testing for colony forming units (e.g. differentiation between active and total units), low variation, high analysis throughput, as well as international harmonization and comparability of results between laboratories.

Standing Committee on Analytical Methods for Processing Aids and Indicators – Determination of Alkaline Phosphatase Activity in Cheese

This project will result in the generation of an IDF/ISO international standard for Alkaline Phosphatase (ALP) determination in cheese. A preliminary study was organized to check the impact of sample preparation, as it is a critical point . To address this and other pivotal points identified, more detailed and precise information was introduced to the draft standard. Visual support was produced illustrating good laboratory practice for the essential steps of the method. Subsequently, two separate inter-laboratory studies were organized to validate the method characteristics using soft, semi-hard and hard cheeses that had been subjected to various heat treatments. The draft standard, with resulting precision data, will now be circulated for DIS voting. This method development is being used for an ongoing project to collect worldwide data on ALP content in different types of cheeses (Project P13).

Marina Nicolas (Project Leader Alkaline phosphatase, left) and Jacqueline Page, SCAMPAI chair

Members of IDF/ISO Project Group on quantification of Lactic acid bacteria by flow cytometry

NEWS FROM ICAR SUBCOMMITTEES AND WORKING GROUPS

Milk Analysis Sub-Committee (MA SC)

At its regular annual meeting on Sunday morning 18 May, the committee members discussed quality assurance and equivalence of analytical results throughout ICAR. Charles Hunlun was present and outlined how the ICAR Certificate of Quality does not specifically detail the auditing system, and lab accreditation is regarded as sufficient to prove analytical competence. However, the MA SC is pushing for more direct proof of proficiency through obligatory participation in an updated proficiency test (ICAR PT 2020), which is further developed and tailored for the needs of reference labs and routine DHI labs.

Another point of discussion was a revision of the protocol for the evaluation of milk analyzers. This will not impact on approval practices when the SC releases it. Finally it was decided to simplify the procedure for approval by keeping the technical quality of the tests to be performed. This should foster the use of the protocol and maintain the quality standard for the approved devices.

As the yearly meeting of the Reference Lab Network was missed by many members of the network, MA SC decided to organize a meeting again in 2015 to be held during the ICAR technical work shop in Krakow, Poland from 10 to 12 June.

Interbeef Working Group

Tuesday´s meeting of Interbeef Working Group, attended by 26 persons, including observers and one member joining via the internet, is determined to provide international genetic evaluations for the Charolais and Limousin breeds. An implementation run for weaning weight is planned for the near future and research on variance component estimation, use of data from crossbred cattle, calving traits, female fertility traits and carcass traits is progressing very well. The Simmental has been chosen as a priority for the next breed for service development.

A Beef Genomics Workshop in Ireland will be held in October/November 2014. A very strong participation by world experts in anticipated.

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Parentage Recording Working Group

The role of the working group and the important relationship with the Genetic analysis WG was reiterated; Parentage Recording is concerned with the application of the genotype information to make parentage decisions.

The new accreditation for applying the results of genotype analysis was discussed at length and a beginning was made on the requirements for this accreditation. It will be open to any organisation that wishes to apply the results of genotype analysis for parentage verification. It is concerned with utilising the numbers that are delivered by the labs from DNA sample analysis and so is a database function.

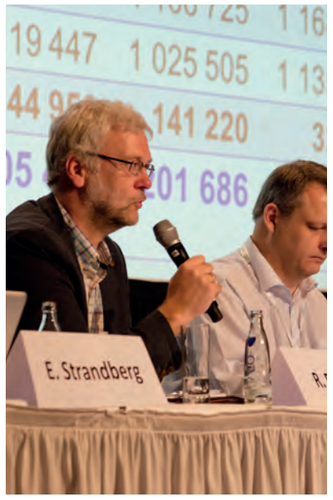
There was a short discussion about the INTERBULL's new initiative GENOEX whereby they will host a database exchanging SNPs for parentage.

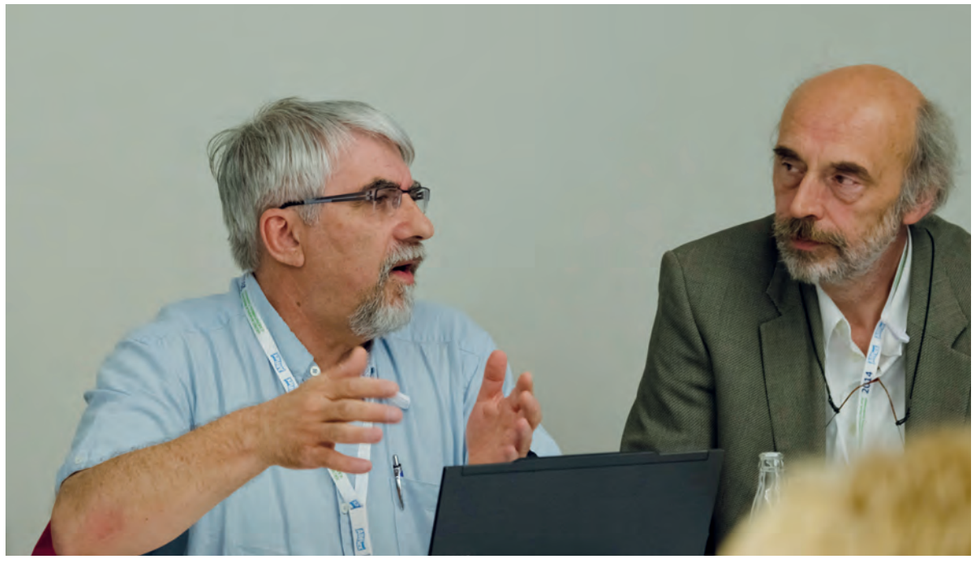
Goats and Sheep Working Group

The goat performance recording and the performance recording of dairy sheep working groups held a joint meeting on Tuesday 20 May 2014. The meeting was chaired by Zdravko Barac and Jean-Michel Astruc. The meeting was open to other participants than the members of both working groups. 20 persons attended the meeting.

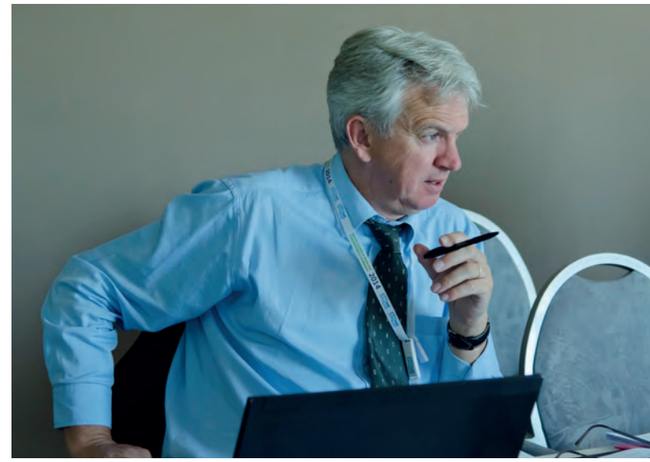
The main topics of the agenda were the changes in the guidelines for both species, the presentation of the results of the on-line enquiries in dairy sheep and goats and the issue of electronic on-farm recording devices. The new guidelines for sheep will be proposed for approval to the General Assembly in Berlin. Changes are also proposed for goat performance recording guidelines. The chairperson of the goat group will send materials with proposed changes to the members of both groups in the next week to get feedback as soon as possible for further procedures. The results of the surveys were presented in detail.

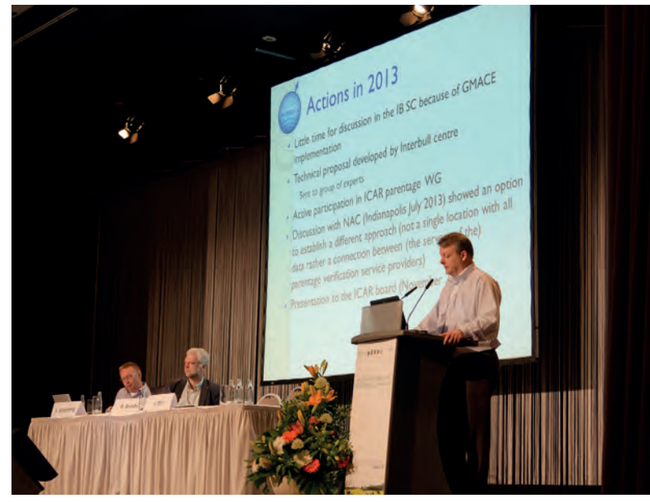
It was concluded to add a new table about milk composition in the on-line enquiry. About on-farm electronic recording devices, different experience feedback from Italy and France were presented and discussed. At the end of the meeting, a Turkish delegation of the sheep and goats breeders association introduced themselves and their main activities and goals.

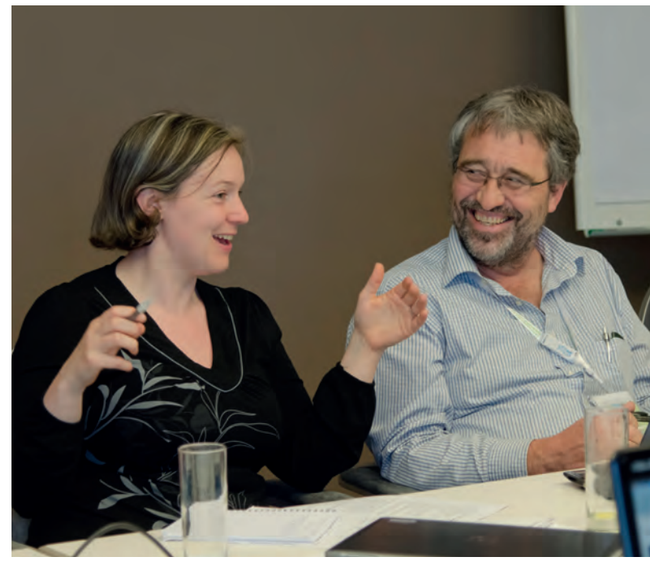




ICAR MEETINGS

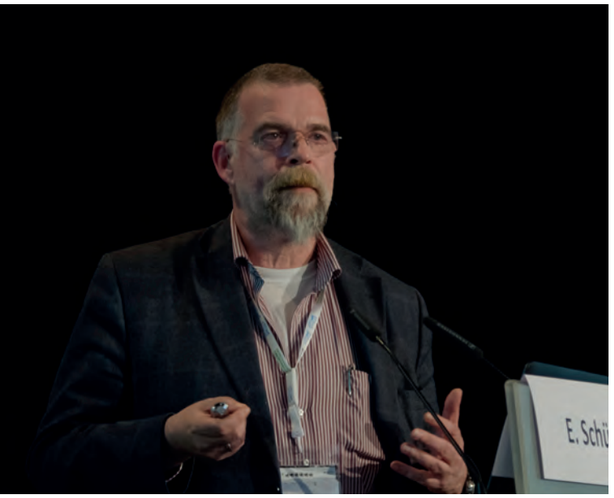






2014 Interbull Meeting

The Interbull community is taking the opportunity of enjoying the Berliners hospitality and once again having a meeting full of exciting scientific discussions and important decisions for the international cooperation on dairy cattle genetics. The activities started on Saturday, May 17, with the Interbull Technical committee meeting, followed by a Steering Committee meeting on Sunday 18. The main topics under discussion were the fine tuning of the international genomic evaluations (GMACE) and the establishment of a genomic data exchange platform (Genoex) targeting initially parentage verification SNP data. The Steering Committee has decided that the August 2014 will be the first routine GMACE run, which was a major expectation of the service users. These and other news were communicated in the first Interbull Business meeting on May 20, along with the Interbull Centre activity and financial reports. Many relevant technical communications followed in the open sessions, reflecting the fast progress in methods and implementations at both national and international evaluations. The Interbull and ICAR joint session on parentage verification closed the day with a much needed panel around this important development. Judging from what has happened in the first days, the Berlin meeting will write another important chapter in Interbull history.



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