

ICAR Sub-Committee on Milk Analysis

- Biennial report of activities in 2008-2010 -

Introduction

The terms of reference for the subcommittee include all aspects related to milk analysis. This covers analytical methods, devices and systems for application for all animal species of interest to ICAR whatever the location is where analyses are performed.

At the date of the present report the subcommittee is composed of 11 members:

Christian Baumgartner (Germany)
Egil Brenne (Norway)
Roberto Castañeda (Argentina)
Jan Floor (South Africa)
Marina Gips (Israel)
Olivier Leray (France), Chair
Silvia Orlandini (Italy)
George Psathas (Cyprus)
John Rhoads (United States)
Gavin Scott (New Zealand)
Harrie van den Bijgaart (The Netherlands)

From the last ICAR session the foreseen extension of the membership to the African continent was concretised with Jan Floor's nomination (manager of LactoLab, ZA) as a new member. Further membership extensions to Asia is still under consideration so as to enlarge worldwide representation in MA SC.

The activities were carried out thanks to email communication and regular meetings either of the whole subcommittee or of part of it (project groups) as follows:

⇒ MA SC:

Niagara Falls (USA), 17 June 2008, 36th Biennial ICAR Session
Sochi (Russia), 17 May 2009, IDF/ISO Analytical Week 2009
Montreal (Canada), 16 May 2010, IDF/ISO Analytical Week 2010
Riga (Latvia), 2 June 2010, 37th Biennial ICAR Session

⇒ Joint IDF-ICAR project on Reference system for Somatic Cell Counting in Milk:

Paris (FR): 9 April 2009
Sochi (RU) : 22 May 2009
Berlin (DE) : 22 September 2009 (IDF World Dairy Summit: communication and poster)
Montreal (CA) : 18 May 2010

⇒ Meetings on On-farm Milk Analysis:

37th ICAR Biennial Session, Riga (Latvia), 30 May-4 June 2010

Niagara Falls (USA), 17 June 2008 (Working Party on OMA)

Paris (FR), 21 April 2009

Riga (LV), 1 June 2010

⇒ ICAR promotion: (Chair and ICAR General Secretary)

Moscow (RU), 18 March 2010: Russian Dairy Union.

Moscow (RU), 18 March 2010: Russian Federation of Milk Producers (Soyuz Moloko)

Moscow (RU), 19 March 2010: Laboratory of All-Union Dairy Research & Design Institute

Working programme and current activities

The status of current activities and progress are reported in the minutes of the MA SC meetings in Sochi (RU) 2009 and Montreal (CA) 2010.

Key issues

Milk Analysis on-farm

In the period 2007-2010, a horizontal working group called Working Party on On-farm Milk Analysis (OMA WP) worked out guidelines for the evaluation of on-farm milk analysers. A draft document was presented and discussed in Niagara Falls 2008. It was upgraded and completed till the end of 2009. During 2008 and 2009 two meetings were held to consider the comments received from the manufacturers. The document was proposed for scrutiny to ICAR member organisation before its approval in the ICAR General Assembly on 4 June 2010 in Riga.

Milk analyser approval by ICAR

The protocol was launched in July 2006.

Since 2003 a new international standard, based on the ICAR evaluation protocol, has been prepared by IDF/ISO. The resulting International Standard ISO 8196-3|IDF 128-3 was published at the end of 2009. In 2010 MA SC approved the replacement of the former ICAR protocol of 2002 with this new international standard. Specific adaptations have been agreed upon with regard to manual instruments that serve as master instrument for calibration and for instruments deriving closely from a formerly approved instrument of the same manufacturer. This will be stated in an updated approval procedure (under preparation).

International reference systems

The ICAR analytical quality assurance system involving the ICAR Reference Laboratory Network has proven its value in the harmonisation of analytical results through international reference materials. Gathered experience will be used in the joint ICAR/IDF project on the development of an international reference system for somatic cell counting. Five experts of MA SC participate tightly in the project. The aim will be to provide reference materials for SCC internationally recognised and to be used for both regulatory and private purposes in a sustainable way. Launching of the project was done in 2009 and an IDF/ICAR Project Group was created. Since then four meetings were held. A communication plan is being run with regularly circulation of newsletters, a website under construction and communication in every possible event (e.g. World Dairy Summit 2009, ICAR Session 2010). Technical development benefits from the significant inputs through the ICAR Reference Laboratory Network meeting of Niagara Falls 2008.

Annual international proficiency testing programme :

It was renewed in 2009 and 2010 for cow milk with no change. Also the renewal for 2011 was approved in Montreal. The convention between Service-ICAR and the organiser (Actilait/Cecalait, France) will be updated and the new proposals for 2011 will be dispatched with the usual annual information/announcement letter in December.

Proficiency studies in sheep and goat milk analysis are still not proposed but this is subject to change if sufficient number of laboratories express their interest for 2011.

An update of the laboratory network situation and proficiency study activities was made in Riga during the meeting of ICAR Reference Laboratory Network, which is reported upon in the proceedings. A decrease in participation occurred in 2009. In a reaction the need was stressed to participate in these trials so as to safeguard international equivalence in milk recording data worldwide. A review of the analytical performance and the overall precision measured within the network through ICAR trials showed continuous improvement in time and compliance with standard precision figures, thus bringing proof of the effectiveness of the system and the work done.

Education and training :

This issue is of major importance in analytical harmonisation. Today it is mainly done through communication in dedicated workshops as for instance with the regular meetings of the ICAR Reference Laboratory Network during the biennial ICAR sessions.

Basically, the international level cannot provide education and training directly to testing laboratories in ICAR countries for evident reasons of workload and language. So the principle lies in education and training actions to be made through lab network members. The international level, ICAR MA SC, should promote regular realisation of national/local actions, providing guidance for essential items, standard documents and other tools.

The possibility to develop videoclips as support to analytical method standards is under consideration by both ICAR MA SC and IDF.

Information to ICAR and ICAR members:

Regular information is given through e-mail with the annual letter on reference laboratory network activities and the updates of the list of network members. On the ICAR website one can find (meeting) reports, survey results, protocols, procedures, etc. The last laboratory workshop held in Riga was used to promote the international reference system approach and to inform on new analytical developments of interest for milk recording and for farmers. Presentations and findings will be all reported and posted on the website of ICAR. Development of tools to improve the access to information is underway (on-line questionnaire on laboratory situation) or under consideration (ICAR laboratory database in milk recording).

Co-operation and links to other WG/TF/SC

MA SC is connected to other expert groups in ICAR but also to technical bodies or project groups in the IDF-ISO cooperation on methods of analysis and sampling for milk and dairy products:

- ICAR Working Party on On-farm Milk Analysis (WP OMA) and ICAR RD SC
- Regular activity through participation as experts in IDF/ISO project groups (e.g. WDS Berlin 2009, IDF-ISO Analytical Week)

- Liaison to IDF Method Standard Steering Group
- ICAR contribution in IDF/ISO symposium in Sochi (RU) in 2009 and in Montreal (CA) in 2010
- Joint IDF/ICAR new work item on an international reference system for somatic cell counting (SCC RS) launched and presented during the IDF World Dairy Summit in Berlin on 23/09/2009.

Key points to address

1- As worldwide recognition is a general issue, it is expected that every ICAR dairy organisation has an expert laboratory nominated as member of ICAR Reference Laboratory Network and that every network member can participate in ICAR PT schemes. Entering in the system is indeed a individual voluntary demarche from which each member organisation can then get much benefit in return within the ICAR community. In a global worldwide economy, this international anchoring provides additional safeguard for compliance and recognition of analytical equivalence worldwide.

2- For the evaluation and approval of new milk analysers by member organisations, the ICAR approved protocol should be used as a minimum requirement. The protocol makes evaluations comparable worldwide, everywhere, everytime, based on which ICAR can grant an international approval.

3. Provision of knowledge and service development:

The development of an international reference system requires further knowledge on the precision of methods of milk analysis used within ICAR. Full spectrum infrared analysis has brought a larger variety of possible parameters to be measured and potentially significant improvement for classical compounds like fat and protein. Fat and protein fine compositions were sources of discrepancy in precision and accuracy with milk analysers based on filter technology. Large spectrum analysis has brought new perspectives to optimise centralised calibration. Till now this has still not been evaluated at the international level. An experiment to evaluate worldwide regional effects on calibration of infrared equipment within ICAR is foreseen for 2011-2012. This would require financial support.

Next meetings

The next meetings will be organised during coming IDF and ICAR international events as follows

Lyon (FR), 23-27 May 2011, IDF/ISO Analytical Week 2011

Bourg-en-Bresse (FR), 20-24 June 2011, ICAR Technical Session

Parma (IT), 15-19 October 2011, IDF World Dairy Summit

Conclusion

MA SC is in expansion for worldwide representativeness (regions, sectors), carrying on its regular activities (work programme), consolidating the existing ICAR AQA system and broadening its recognition, strengthening IDF/ ICAR collaboration for common interests, broadening focus to milk analysis outside laboratories (with other ICAR technical bodies) and aiming to develop adequate tools and future services in milk analysis.

37th ICAR Biennial Session, Riga (Latvia), 30 May-4 June 2010

Four Yearly Programme of Sub-Committee on Milk Analysis (MA SC) 2007-2010

Work item	1	2	3	4	5	6	7	8	9	10	11
Theme	Analytical QA (toolbox)	Analytical QA (toolbox)	Analytical QA (toolbox)	Analytical QA (toolbox)	Analytical QA (toolbox)	Laboratory network & harmonisation	Laboratory network & harmonisation	Laboratory network & harmonisation	Laboratory network & harmonisation	Laboratory network & harmonisation	International co-ordination & consistence
Title	Guidelines on organising proficiency study	Guidelines on organising centralised calibration	Guidelines on on-farm analytical devices	Reference materials Reference systems	ICAR approval of new milk analysers	On-line questionnaire on laboratory situation within ICAR	Website data base on laboratories of ICAR countries	International proficiency studies	Reference Laboratory Network meeting	Education & training on analytical matters	Liaison to other (international) groups of experts
Experts	<i>O Leray G Psathas S Orlandini</i>	<i>C Baumgartner O Leray S Orlandini</i>	<i>C Baumgartner H v d Bijgaart M Gips O Leray E Brenne</i>	<i>C Baumgartner H v d Bijgaart O Leray S Orlandini</i>	<i>3 examiners + All</i>	<i>G Psathas G Scott + ICAR HO</i>	<i>O Leray G Psathas + ICAR HO</i>	<i>O Leray S Orlandini</i>	<i>All</i>	<i>C Baumgartner S Orlandini + ICAR HO</i>	<i>H v d Bijgaart O Leray</i>
Objectives	ICAR guidelines and IDF/ISO IS	ICAR guidelines and IDF/ISO IS	ICAR guidelines	To be considered	Eval. report examination / advising ICAR	Two-yearly information	Regular updated information	Evaluation services	Two-yearly information	Improving laboratory testing performances	Information and feed-back / Horizontal work
2007	- Introduction - Outlines	- Introduction - Outlines	- Introduction - Outlines	Consideration for interest : - Provision of information - Guidelines on RM Qualification - Qualifying RMs	On-going process			Annual Programme	Programming	Elaboration of supports for teaching/training (movies on methods)	Setting up of a horizontal ICAR working party on on-farm testing (composition, work programme, meeting) Liaison persons with IDF MCM & QASADS SC
2008	Working draft	Working draft	Working draft	SCC reference system	On-going process	Definition of content, structure, reporting	Content & design definition IDF completed ICAR	Annual Programme	Organising	On-going process Video clip project	OMA WP meeting MSSG/ICAR SCC reference system
2009	Delayed (ref system)	Delayed (ref system)	- Reviewed draft - MO draft	SCC reference system	On-going process	Implementation delayed	delayed	Annual Programme	Programming	On-going process Video clip project	OMA WP meeting MSSG/ICAR SCC reference system
2010	Delayed (ref system)	Delayed (ref system)	Final draft: - G.A. approval - Inclusion in ICAR guidelines	SCC reference system	On-going process Process update Protocol update	Implementation delayed	delayed	Annual Programme	Organising	On-going process Video clip project	OMA WP work (MASC & RDSC) MSSG/ICAR SCC reference system

