

## ICAR Working Group on Milk Testing Laboratories

### - Biennial report of activities in 2002-2003 -

At the date of the present report, ICAR Working Group on Milk Testing Laboratories (MTL WG) is composed of 7 world-wide representative members as follows :

Christian BAUMGARTNER	(Germany)
Egil BRENNE	(Norway)
Olivier LERAY	(France)
Ugo PAGGI	(Italy)
George PSATHAS	(Cyprus)
John RHOADS	(United States of America)
Harrie VAN DEN BIJGAART	(The Netherlands)

In 2003, Des Johnston from LIC New Zealand resigned from his membership and a new nomination to represent Oceania is expected.

Since the last Biennial ICAR Session in Interlaken (May 2002) and the date of the presentation of this report, the Working Group on Milk Testing Laboratories (MTL WG) has met four times :

- 25 October 2002, in Palencia (Spain), at the occasion of the Workshop on Small ruminants milk analysis (24/10/2004),
- 19 May 2003 in Holstebro (DK) during IDF/ISO/AOAC Analytical Week 2003,
- 22 April 2004, in Parma-Italy during the IDF/ISO/AOAC Analytical Week 2004,
- 31 May 2004, in Sousse-Tunisia during the 34<sup>th</sup> Biennial ICAR Session of ICAR.

### **Working programme :**

The working programme on the implementation and the development of analytical quality assurance in milk testing laboratories presented in Ottawa in 1994 is almost completed for cow milk.

A special attention is now paid to specific issues about small ruminant milk analysis, i.e. sheep and goat milk introduced in the general frame in 2002.

Besides, on-farm milk analysis and its implications for analytical quality assurance and harmonisation for analysis related devices (robot sampling, vials and containers) are new subjects of consideration in connection with Sub-Committee Meters and Jars.

## **1. Technical documents :**

### **1.1. Guidelines for Quality Assurance in DHI analysis :**

The document was completed in 1998 and has since then become a guiding paper for milk testing laboratories in ICAR countries. The working group maintains the document updated for aspects relevant to new methods and standards or standard revision.

### **1.2. Protocol for the evaluation of milk analysers and official approval by ICAR:**

The standard protocol to evaluate and validate milk analysers in the milk recording frame was completed and was circulated to Board members and ICAR organisation members for getting their comments and agreements. Agreements were received from replying organisations. Manufacturers were consulted and remarks taken into account where relevant. Since then it is considered ready-to-use and the last meeting saw the decision to make the document become operational. For that, now the working group requests the final agreement of ICAR Board.

A procedure was defined, that describes the steps for an approval request, the evaluation result examination for the conformity versus the requirements stated in the protocol and bringing subsequent conclusions for the approval delivery.

The document and its application are the subject of the presentation by Dr. Christian Baumgartner on behalf of co-workers of the group, in the technical session 5 of the 34<sup>th</sup> ICAR Sessions. The scope, objectives, general intention and technical goals, are presented together with the chaining of technical procedures and the process proposed to get an approval by ICAR.

At the time being, the protocol is applicable to laboratory analysers. The development of on-farm analytical devices would necessitate further consideration and a possibly specific protocol.

The protocol is considered by IDF to be adapted in an international standard for milk analysers.

### **1.3. Information to ICAR :**

An inquiry on milk bottles for sampling and racks for automated analysis was carried out through a questionnaire by MTL WG and SC MJ to collect information on the current situation within ICAR. A report was produced in 2003 and is available on the web space dedicated to MTL WG.

## **2. Participation in the international standardisation :**

Members of MTL WG participate as experts in IDF/ISO/AOAC Analytical Week. Since the last ICAR sessions, IDF/ISO/AOAC Analytical Weeks were held in Holstebro-Denmark (19-22 May 2003) and Parma-Italy (19-22 April 2004). Items of interest are updates and revisions of standardised analytical methodology for the determination of fat, protein, lactose, SCC, urea, and casein in milk. Current items are:

- Sheep and goat milk : Standardisation of reference methods for fat, protein and somatic cell counting. (*underway*).
- Lactose : Standardisation of HPLC as reference method and standardisation of differential pH method as an alternative method. (*underway*).
- Urea for cow milk : Standardisation of a reference method (enzymatic by differential pH measurement) (*completed in 2004*).
- Somatic Cell Counting : Revision of IDF Standard 148A:1995 (including aspects of sheep and goat analysis). (*underway*)
- Routine (alternative) methods : Standardised protocol for the international validation of milk analysers, using a criteria approach similar as in the ICAR protocol (*new work item*).
- Implementation of an international dairy reference laboratory network for IDF and a list of laboratory members (talent file) located in a searchable data base on the IDF web site (*underway*).

### 3. International DHI Reference Laboratory Network :

#### 3.1. Current situation :

ICAR reference laboratory network was created in 1996. It received a new nomination from Argentina in the end of 2003 and nowadays is composed of 38 laboratory members from 32 countries. Present members:

Argentina	(1)	Austria	(1)	Belgium	(2)	Bulgaria	(1)
Cyprus	(1)	Czech Republic	(1)	Denmark	(1)	Estonia	(1)
Finland	(1)	France	(1)	Germany	(1)	Hungary	(1)
Ireland	(1)	Israel	(1)	Italy	(1)	Korea	(1)
Latvia	(1)	Lithuania	(1)	The Netherlands	(1)	New Zealand	(1)
Norway	(1)	Poland	(1)	Slovak Repub.	(1)	Slovenia	(1)
South Africa	(3)	Spain	(1)	Sweden	(1)	Switzerland	(1)
Tunisia	(2)	United Kingdom.	(2)	U.S.A.	(2)	Zimbabwe	(1)

(n) : number of member(s)

Collaboration and mutual information between members are expected to promote and harmonize good analytical practices. To help in that, an official list with information of every member is periodically updated and distributed by e-mail and made available on the ICAR web site.

Since 2002, ICAR Reference Laboratory Network has been broadened to analysis of milk of small ruminants (i.e. sheep and goat) following the principle that analytical frames should exist for every kind of milk used for human benefit and dealt with within ICAR. This opens the door to other animal species.

The list of network members was completed with new members competence with regard to small ruminant milk analysis. Members operating for milk of small ruminant were generally already members of the network for cow milk analysis, thus constituting smaller sub-networks with 15 laboratories for goat milk and 14 for sheep milk. For information, one is mentioned operating for buffalo milk as well.

Dedicated activities are assigned to AQA service providers identified by MTL WG and proposed to ICAR. The supplier designated for sheep and goat is LSL-AIA (IT) as is

CECALAIT (FR) for cow. The scope of the work, the technical details and the financial aspects were defined in congruence with what exists for cow milk.

### **3.2. International Interlaboratory Proficiency Studies :**

International proficiency studies are organised routinely under the surveillance of MTL WG twice a year for fat, protein, lactose, somatic cell counting and urea, what makes 17 trials organised for cow milk analysis at the date of the report since 1996. Participation is regularly around 20 (or more) for fat, protein and 15 (or more) for lactose, somatic cell counting and urea.

For sheep and goat, the two past years have been experimental in order to optimise the schedules and organisation and to evaluate the degree of interest for international proficiency studies.

For each species, there were two studies organised in 2003 and one scheduled in 2004. In 2003, participation appeared much smaller than in cow milk analysis - 6 to 9 participants depending on the analyte and the species – which resulted in modifications in the organisation for 2004. Conclusions are expected to be drawn in Autumn 2004.

## **4. Communication and information :**

**4.1. ICAR website :** From July 2002, the webspace designated to MTL WG has been progressively filled in. As much as possible information is provided so as to make it a practical and useful source to ICAR country laboratories. Last updates were made in March 2004.

**4.2. 34<sup>th</sup> ICAR Sessions :** Two speeches will be held by members of the working group in the technical session 5, one about the protocol for the international validation of milk analysers by Christian Baumgartner, and the other about milk recording logistics by Harrie van den Bijgaart in connection with Uffe Lauritsen of Sub-Committee on Milk Meters and Jars.

**4.3. Meeting of ICAR Reference Laboratory Network :** According to the wish expressed by members attending the first meeting in Interlaken 2002, a second meeting is organised in Sousse on 31<sup>st</sup> of May 2004. It is made of technical presentation by speakers and discussions of analytical subjects with the participation of recognized experts in the area of small ruminants: Bianca Moioli, Jean-Michel Astruc and Drago Kompan.

## **5. Next meeting of ICAR MTL WG :**

Next meetings will be organised in Autumn 2004 (location to be defined by the group) and during the IDF/ISO/AOAC Analytical Week in Spring 2005.

Poligny, 1<sup>st</sup> of April 2004

Olivier Leray  
Chair of ICAR Working Group  
on Milk Testing Laboratories