MTL WG

ICAR Working Group on Milk Testing Laboratories

ICAR Reference Laboratory Network

- 3rd Meeting, Kuopio, 6 June 2006

- Agenda -

8.30 :	Opening - Welcome - Round table for presentation Introduction : Composition and evolution of the network since 1996 (O. Leray)
8.50 :	ICAR AQA strategy and prospect for the network (O. Leray)
9.10 :	Information on quality assurance policy of ICAR and view on milk analysis aspects (A. Rosati)
9.30 :	Discussion
10.00 :	Break (coffee, tea, drinks)
10.20 :	Reference system - Principle and practice (C. Baumgartner)
10.40 :	Reference and calibration systems for routine milk testing - Advantages/Disadvantages, choice (O. Leray)
11.00 :	Example of national reference system and centralised calibration (J. High)
11.20 :	What is the required Accuracy of a Test related to Genetic Improvement (H. Wilmink)
11.50 :	Discussion - Conclusion of the meeting
12.20 :	Closure

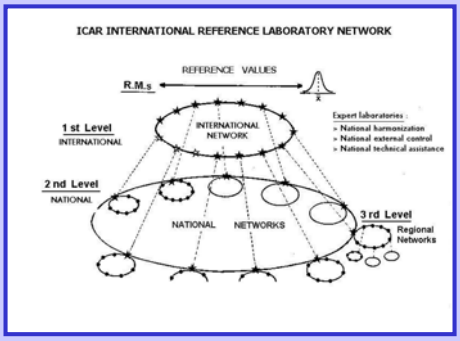
- INTRODUCTION - GENERAL OBJECTIVES -

- **History :** From 1994, a new ICAR policy for AQA
  - Develop an international AQA system for DHI within ICAR based on harmonised laboratory practices.
  - Provide confidence and allow between country comparison and international genetic index calculation with regards to analytical data.
- **Implementation by MTL WG :**
  - Harmonisation of analytical practices :
    - » Analytical methods
    - » Analytical Quality Assurance
    - » Analytical performances and traceability of precision

ROLES OF THE NETWORK

- ICAR Reference Laboratory Network is expected to operate as :
  - an international platform for diffusing GLP and AQA based on international guides and standards => communication
  - the instrument for defining international consensual so-called « true values » to refer to and provide the precision traceability to routine labs via network members => International Proficiency Studies
  - a mean for developing collaborations for laboratory purposes => Co-operation.

THEORETICAL STRUCTURE



Missions / activities expected - Eligibility criteria -

- **1- National ring test organizer**
- **2- Reference Material supplier**
- **3- Master laboratory for centralized calibration**
- **4- Teaching and training in laboratory techniques**
- **5- Information on analytical methods**
- **6- Evaluation of analytical methods/instruments**
- **7- Research on analytical methods**
- **8- National regulatory control of analyses**
- **9- Routine testing where only 1 or 2 labs/country**

ICAR Reference Laboratory Network

Composition & evolution

from 1998 to 2006

ICAR Reference Laboratory Network
Membership

37 laboratory members from **31** countries :

Argentina	(1)	Austria	(1)	Belgium	(2)	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)

among which : 37 members for cow
14 members for goat
13 members for sheep

ICAR Reference Laboratory Network
- Evolution since 1998 -

Evolution of the composition and national roles from 1998 to 2006

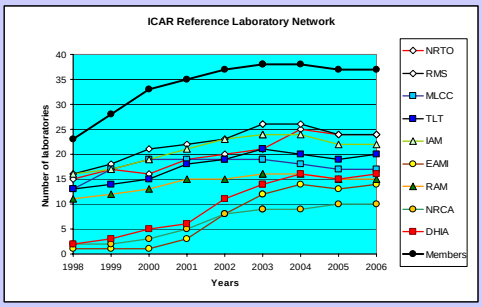
YEAR	NRTO	RMS	MLCC	TLT	IAM	EAMI	RAM	NRCA	DHIA	PAYMENT	Other anal.
1998	15	16	13	13	16	1	11	2	2	1	1
1999	17	18	17	14	17	1	12	2	3	1	1
2000	16	21	19	15	19	1	13	3	5	1	1
2001	19	22	19	18	21	3	15	5	6	2	1
2002	20	23	19	19	23	8	15	8	11	5	1
2003	21	26	19	21	24	12	16	9	14	7	3
2003	21	26	19	21	24	12	16	9	14	7	3
2004	25	26	18	20	24	14	16	9	16	9	3
2005	24	24	17	19	22	13	15	10	15	8	3
2006	24	24	17	20	22	14	15	10	16	10	3

NRTO = National Ring Test Organiser
RMS = Reference Material Supplier
MLCC = Master Laboratory for Centra
TLT = Training in Laboratory Techniques
IAM = Information on Analytical Methods
EAMI = Evaluation of Analytical Metho
RAM = Research on Analytical Methods
NRCA = National Regulatory Control of Analyses
DHIA = Dairy Herd Improvement Anal
Membership = Officially nominated by ICAR National Committees
Payment = Analyses for milk payment

Evolution of the proportions of national roles from 1998 to 2006

YEAR	NRTO	RMS	MLCC	TLT	IAM	EAMI	RAM	NRCA	DHIA	PAYMENT	Other anal.
1998	68	73	59	59	73	5	50	9	9	5	5
1999	63	67	63	52	63	4	44	7	11	4	4
2000	48	64	58	45	58	3	39	9	15	3	3
2001	54	63	54	51	60	9	43	14	17	6	3
2002	54	62	51	51	62	22	41	22	30	14	3
2003	55	68	50	55	63	32	42	24	37	18	8
2004	66	68	47	53	63	37	42	24	42	24	8
2005	65	65	46	51	59	35	41	27	41	22	8
2006	65	65	46	54	59	38	41	27	43	27	8

Evolution of membership and missions/activities from 1998 to 2006



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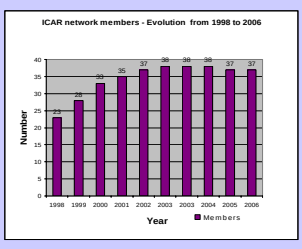

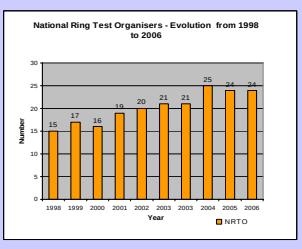

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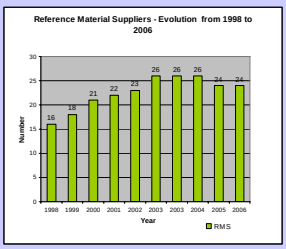

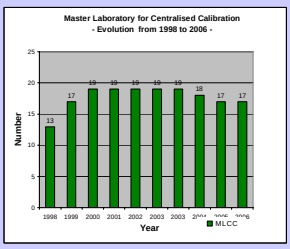

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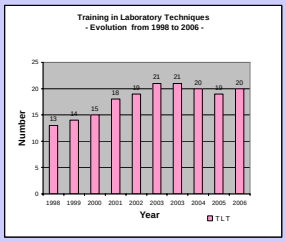

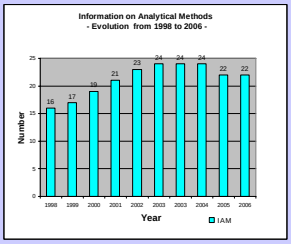

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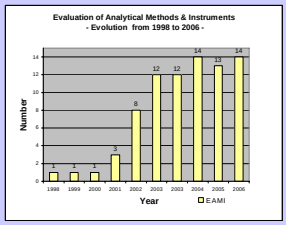

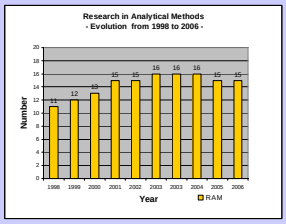

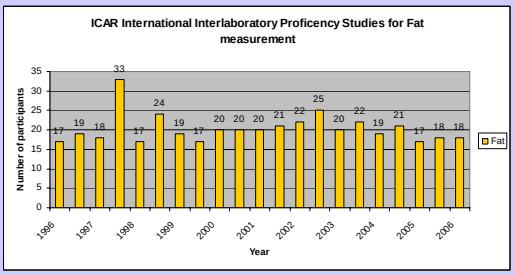

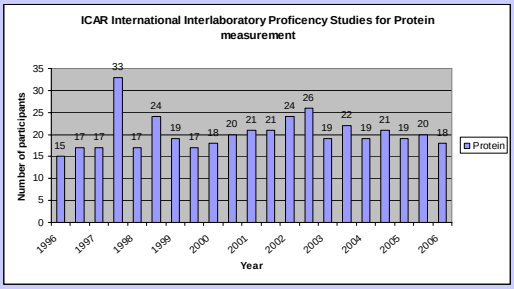

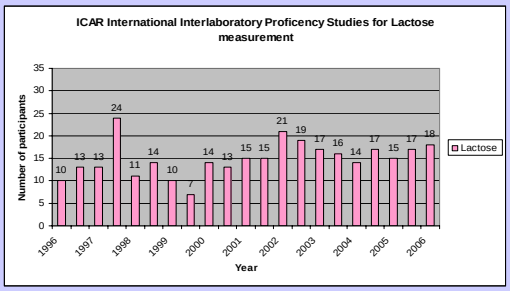

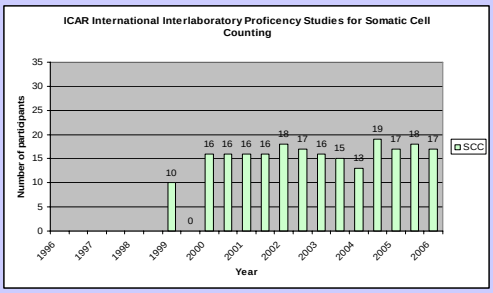

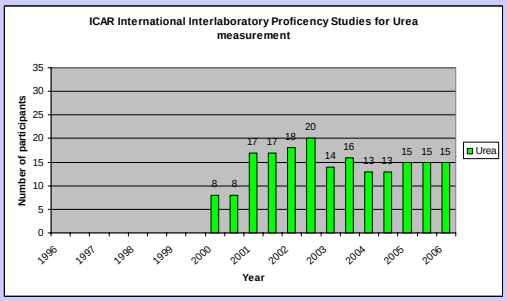

CONCLUSION ON THE NETWORK IMPLEMENTATION

Nominations by national organisations :

have reached a plateau

⇒ indicates the phase of implementation and growth completed

International Proficiency Testing schemes :

followed at a regular rate by the members of the laboratory network

⇒ confirms the interest in harmonisation and congruent analytical performances between countries

ICAR AQA Strategy

Implementation and prospect

Olivier Leray, Cecalait, France

ICAR AQA system presented in Ottawa 1994 ⇒ Start up

Objectives :

1- Definition & characterisation of appropriate analytical methods

2- Definition of minimum conditions of quality assurance (methods, samples, control)

3- Definition of a frame and a model for harmonising and structuring AQA

4- Definition of tools to achieve lab harmonisation and establish analytical traceability

First period of implementation (1994-2006)

Completion of the first objectives of Ottawa :

1- Definition & characterisation of appropriate analytical methods:

⇒ IDF/ISO standardisation (revision & creation : F, P, L, urea, SCC, sheep & goat)

⇒ ICAR protocol for the evaluation/approval of routine methods (2002)

⇒ Approval process implementation (July 2006)

First period of implementation (1994-2006)

Completion of the first objectives of Ottawa :

2- Definition of minimum conditions of quality assurance (methods, samples, control) :

⇒ Guidelines for QA in milk recording analysis:
- Circulation for use in 1998
- revision in 2006
- publication in ICAR guidelines in 2006

First period of implementation (1994-2006)

Completion of the first objectives of Ottawa :

3- Definition of a frame and a model for harmonising and structuring AQA (1996):

⇒ International network of reference laboratories

⇒ National routine lab monitoring by reference laboratories

⇒ List of competence = Missions (suggested) = Eligibility criteria to the network

First period of implementation (1994-2006)

Completion of the first objectives of Ottawa :

4- Definition of tools to achieve lab harmonisation and establish analytical traceability:

⇒ Proficiency testing schemes :

- Standard protocol and standard data treatment (from 1996)

⇒ Reference materials: (publ. in ICAR Session proceedings)

- Recombined milk samples for calibration or control for composition (MIR) and SCC (Leray, 1990, 1996, 1998)
- Long term preservation by deep-freezing (Baumgartner, 2004)

Second period of implementation (from 2006)

1- A new way of life for national organisation?

ICAR QA policy oriented towards Quality Certificates and Special Stamp granting

Thus for milk analysis and laboratories

strengthening and formalising involvement of ICAR national organisations in AQA

since then ...

Second period of implementation (from 2006)

Whereas

First period = Invitation to ICAR members to enter the AQA system proposed by ICAR and use it for own QA system (accreditation)

Second period = Incitation to ICAR members to follow ICAR guidelines and take part regularly in laboratory network proficiency testing as prerequisite to benefit of ICAR quality certification

Second period of implementation (from 2006)

⇒ Nomination : Every dairy country of ICAR should nominate a minimum of one laboratory so as to enable linkage between national and international levels

⇒ Harmonisation & traceability : Every dairy country of ICAR should involve a minimum of one laboratory in each trial of the two-yearly ICAR proficiency testing scheme so as to establish the effective consensual analytical truth for ICAR

Second period of implementation (from 2006)

2- Enhancing harmonisation in laboratory practices = Improvement of the toolbox

⇒ Standard protocols (guides) for reference laboratories :

- Proficiency testing : Harmonised protocol to enable comparison between countries

- Centralised calibration : Guide for experimentation, elements of decision and calibration samples, organisation & implementation

Second period of implementation (from 2006)

3- Developing AQA services to laboratories :

⇒ Service ICAR : (Hypothesis of work)

Recipient/intermediate for analytical service requests of ICAR members (e.g. analytical information, teaching, auditing, reference materials, etc)

and orient them to specialised organisations ⇒ list of service suppliers on the web site and internet links.

⇒ ICAR ref lab network : Characterisation of RMs (reference values) in a Reference system.

Second period of implementation (from 2006)

4- Optimising networking :

⇒ Searchable data base on laboratories in ICAR website :

1- Presentation of the members ICAR Reference Laboratory Network.

2- Possibility for a complete presentation of routine laboratories in ICAR member countries through individual web spaces dedicated to countries in connection with the network member list.

Conclusion

The AQA system of ICAR is a major topical tool and will keep being in the future

since milk recording and genetic evaluation are international issues today.

Its maintenance and development rest an issue for ICAR.

With this respect, new objectives can be proposed to MTL WG for the next years.

Thank You for your attention !