DCMRWG update & short-term prospects for cattle milk recording

Dairy Cattle Milk Recording WG
Presented by Pavel Bucek
Panel Discussion: "What Next?"
Friday 21/06/2019

ČMSCH a.s. ČESKOMORAVSKÁ SPOLEČNOST CHOVATELŮ

ICAR & IDF/ISO ANALYTICAL WEEK CONFERENCE 2019 PRAGUE CZECH REPUBLIC

ICAR THE GLOBAL STANDARD FOR LIVESTOCK DATA

ICAR CERTIFICATE OF QUALITY

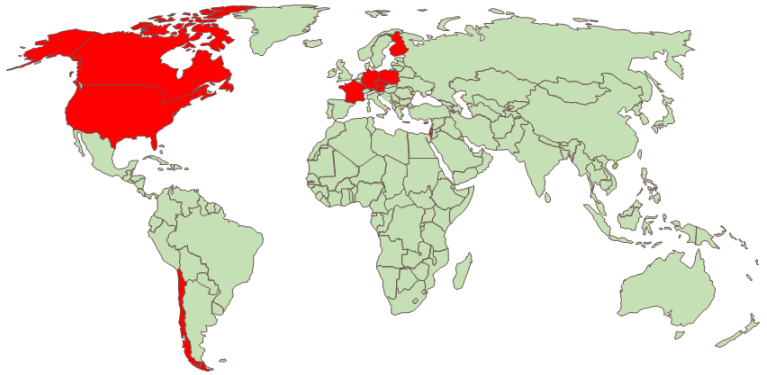
Points for discussion

- Introduction to the working group
- Core activities
- Key research projects
- 24-hour calculation trends (based on data obtained from late 2018 to early 2019)
- Research
- Communication with industry
- Points for discussion – what will our milk recording policies be going forward?

Dairy Cattle Milk Recording WG

Members

- *Pavel Bucek – Czech Republic*
- *Franz Josef Auer – Austria*
- *Xavier Bourrigan – France*
- *Bruce Dokkebakken – USA*
- *Kai Kuwan – Germany*
- *Juho Kyntäjä – Finland*
- *Yaniv Lavon – Israel*
- *Filippo Miglior – Canada*
- *Danuta Radzio – Poland*
- *Friedrich Reinhardt – Germany*
- *Carlos Trejo Jimene – Chile*

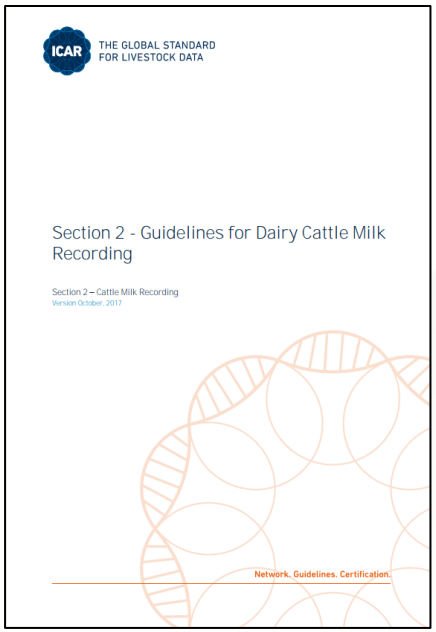


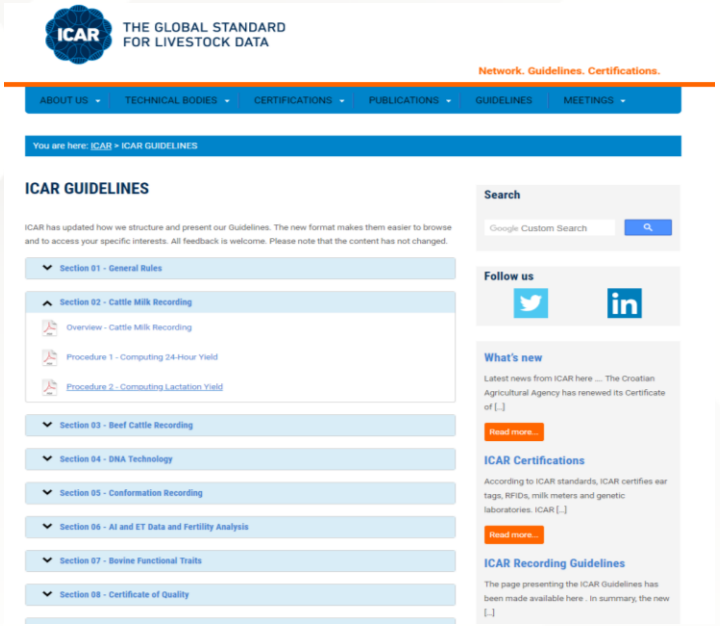
World map by www.freeworldmaps.net

- **Research and/or practical backgrounds**
- **Directly involved in the daily management or operation of dairy herd milk recording**
- **Representing all important geographic areas**
- **WG specialises in all aspects of dairy cattle recording, from current and prospective farm systems to lactation calculations**

Core priority of the working group

- Cattle milk recording Guidelines; last update – general aspects of cattle milk recording (approved February 2018)
- Update Procedure 1 – 24-hour calculations
- Make content more customer-oriented, clearer and more practical





Key projects of the working group

- **Monitoring practice among MROs (surveys)**
  - 24-hour calculation surveys of automatic and classical milk recording systems (52 organisations)
  - World Trends in Cattle Milk Recording (3 parts/46 organisations)
  - South American project
  - Plausibility checks project (25 organisations)
  - Management of Milk Recording Organisations – Current Problems and Future Challenges (41 organisations)
- **KPI development for the ICAR Certificate Quality**
- **Big data project (milk recording x feeding)**
- **Special interdisciplinary projects**
- **Collaboration with ICAR WGs, SCs & TFs (Accuracy Task Force & Sensors Device Task Force)**

Key research projects impacting on the Guidelines

- Recalculation of the Liu method – AM/PM sampling is the industry-standard
- Research project on sampling scheme C calculations
- Detailed technical analysis of 24-hour calculations
- Comparing different 24-hour calculation methods
- Recalculation of coefficients for automatic milking systems (Galesloot method)
- Earmarking improvements for the Liu method adaptation of sampling scheme Z, a method that provides several benefits
- AfiLab Project – in-line analysis
- Comparing different 24-hour calculation methods

Communication with industry

- Technical sessions – communication and information exchange with MROs
- Practical workshop in Prague (more than 140 participants)
- Advisory services & resolving technical MR problems
- Discussing changes to the Guidelines externally beyond the group
- Promoting ICAR and WG abroad, e.g. training in Iceland and Poland, etc.

ČMSCH a.s. ČESKOMORAVSKÁ SPOLEČNOST CHOVATELŮ

ICAR CERTIFICATE OF QUALITY

Points for discussion – the future of milk recording

- Big data is an issue that needs to be discussed
- The banking industry is an example of successful implementation = potential for new services
- Artificial intelligence, new software, deep learning and big data
- Discuss deep learning and new techniques coming on stream

- Availability of AMS data & MRO internal data
- MROs utilise laboratory data
- Other heat time data
- Option of combining all data including health data for analysis
- MR and breeder organisations keep conformation data
- We will achieve higher value if we analyse data together

New analysis

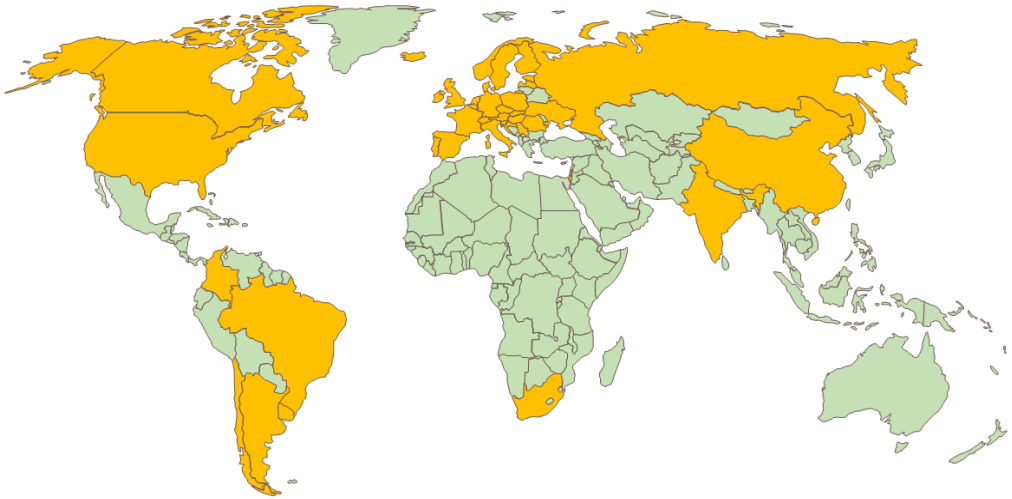
- Measurements of other important indicators: weights, feed intake, feed efficiency, metabolic problems, ….. again more information
- Ways of combining data from AMS with other animal information

Points for discussion – the future of milk recording

- Perform more tests at the beginning of lactations and less at the end
- Metabolic problems most commonly occur at the beginning of lactations

ICAR Dairy Cattle Milk Recording Working Group Survey: 24-Hour Calculation Methods – Global Trends

Participants

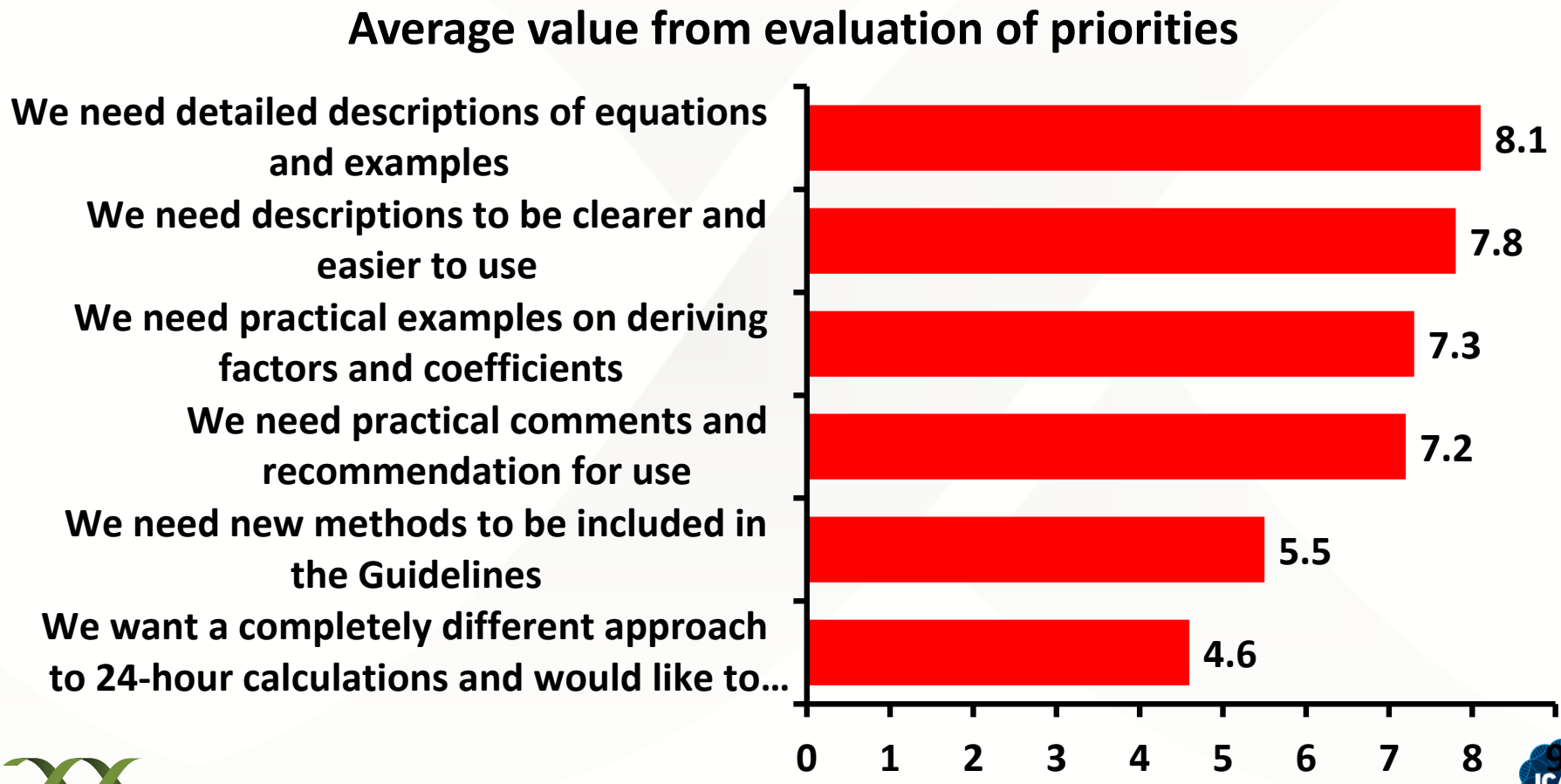


World map by www.freeworldmaps.net

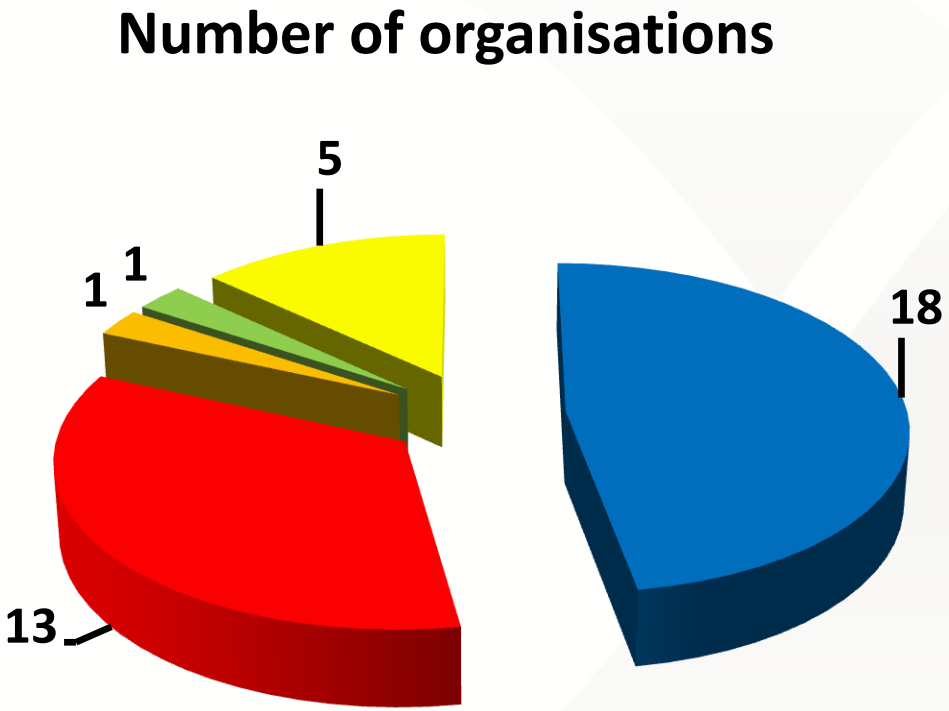
- Data were obtained from **52 organisations** from around the world
- Consisting of **90 questions**, the survey provides an analysis of all data, which were submitted between **December 2018 and March 2019**

New 24-hour calculation Guidelines

With regards to the current version of the Guidelines, rate the following statements in terms of priority on a scale of 1 to 10 (1=very low, 10=very high)



Who is responsible for developing and implementing new methods?



- Milk Recording Organisation (MRO)
- Our MRO collaborates with a research institute
- Our MRO collaborates with a research institute as well as commercial companies
- Our MRO collaborates with commercial companies
- Other

New 24-hour calculation Guidelines

- Analyse areas that are harmonised and those that aren't – summarise results
- Identify differences in implementation
- Level of harmonisation
- Do we need harmonisation in every field?
- Is complete harmonisation even possible?
- Most MROs follow ICAR requirements, but minor differences remain
- Future direction
- **Calculation – collaboration – sharing factors and coefficients, problems with calculations and estimating factors**

ICAR Dairy Cattle Milk Recording Working Group Survey: 24-Hour Calculation Methods – Global Trends

New 24-hour calculation Guidelines

- Estimating coefficients: international project. Subject TBC.
- New services for herds using AMS
- New technologies, screening and possible additions
- Do we need new ICAR services in this field? A new laboratory for verifying the quality of estimated factors, coefficients?
- Lend support to countries in need, advisory services
- Some MROs are unable to derive equations, providing an opportunity for ICAR to offer data check and outsourcing services

ICAR Dairy Cattle Milk Recording Working Group Survey: 24-Hour Calculation Methods – Global Trends

Consumer orientation

- The consumer point of view will be important going forward
- BV health traits are an important form of consumer data

Further discussion items

- Future innovations of the ICAR Guidelines, e.g. individual lactation qualification in France
- Project milk recording outputs and outcomes
- Daily milk recording
- New services for herds using AMS
- New technologies
- **Quality Management Systems for Dairy Farming – Opportunities & Challenges for Recording Organisations. New services for MROs.**
- **Validation and certification, development of quality indicators, plausibility checks for multiple data sources; checks/validations**
- **Standardisation and calibration are expected to play a big par**t
- Data storage strategies
- Integrating deep learning within MR practice

Resolving current problems & priority points for the MR Workshop

- How do we keep AMS customers happy?
- Whose milk is in the vial?
- How complex exactly is it to calculate daily yields?

Summary

- Farmers need to receive results faster, with a focus on minimising data processing centre delays
- Farmer services must be improved
- MROs need to create more value for customers, particularly in the area of herd management
- More just-in-time services with no delays, e.g. upload data one week and deliver results the next
- More services for management purposes with clearer management decisions. We must give farmers reason to be involved in the milk recording system we advocate
- We need to provide more benefits than AMS manufacturers
- Data used for genetic evaluation and management
- Only with better services can we keep abreast of business

Thank you for your attention!

https://www.icar.org/index.php/technical-bodies/working-groups/dairy-cattle-milk-recording-working-group/