THE GLOBAL STANDARD FOR LIVESTOCK DATA

September 2019

ICAR NEWSLETTER

Network. Guidelines. Certification.

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1.0 ICAR 2019 CONFERENCE IN PRAGUE: A BALANCE AND A VIEW TO THE FUTURE

The 43rd ICAR Annual Conference was held in Prague in June 2019 with more than 400 participants attending. The themes of the Conference offered a chance for the ICAR Members, Sub-Committees and Working Groups to debate specific issues, tailored to their interests and present the most updated achievements. Sessions were not only limited to the ICAR groups but shared the ground with technicians of the Member Organisations and academics with common interest in a specific area.

The capacity of ICAR to aggregate academic knowledge and the expertise provided by the DHI Organisations made it possible to have a Programme that was well interconnected and caught the interest of a wide range of stakeholders from key disciplines.

This approach was perfectly reflected in the Plenary Session where the issues like the impact of Genomic selection on recording, improving Feed Efficiency, Health, and Welfare were all presented. The Plenary Session is just an example of the ICAR attitude toward a multi-disciplinary orientation for tackling the shared efforts of the ICAR groups in supporting the sector.

Similarly, the following sessions provided guidance on the latest technologies in genomics, sensor devices, and new services in identification and recording. Special attention was paid to the accuracy and to the various components of the milk analysis in order to have comparable and standardised data that can be guaranteed by the participation of the DHI to the ICAR Proficiency Test (PT).

The core of ICAR conference is always the identification, recording and genetics of farm animals in their whole classic sense. However, even neglected species like Camelids found their necessary space among the 120 presentations since a specific Session integrated this species within the other fibre animals (mainly sheep and goats), presenting the interest that ICAR is giving to the species. Recently a multi-language survey in English, French and Arabic collected the views of more than 250 experts in Camelids, answering to the problems that identification, milk recording, morphology and traits, reproduction and fibre production have to face.

Animal Welfare is a key topic for ICAR members and a lot of interest was shown in the 2019 survey on the recording traits related to animal welfare. The considered traits were: a) disease traits, b) body condition, injuries and cleanliness, and c) temperament and behaviour. More than 200 answers provided clear indication on the animal welfare and how it is evaluated by the different stakeholders, including retailers, DHI organisations, farmers' associations, software houses, public research institutions and academic bodies.

ICAR Board

2.0 ICAR BOARD: NEW COMPOSITION AFTER PRAGUE 2019

During the Prague Annual Conference, the Board met in one of its routine meeting. Among the others, on behalf of the ICAR community, the ICAR Board thanked Jorge Lama (COOPRINSEM, Chile) who finished his first mandate in the ICAR Board as well as Neil Petreny (Lactanet Canada) that ended its mandate as Financial Inspector and welcome Ernst Bohlsen (Landeskontrollverband Niedersachsen e.V.) who started his mandate as Inspector at the ICAR Board for the period 2019-2023, replacing Neil.

Members of the ICAR Board at the Prague 43rd Annual Conference.

New ICAR Members

3.0 NEW ICAR MEMBER ORGANISATIONS

Full members

3.1 FULL MEMBERS

Since the last meeting in 2018 held in Auckland, four Organisations joined ICAR as full members:

1. Holstein Latvia
2. Radgivarna (Sweden)
3. Asociatia Aberdeen Angus (Romania)
4. The Chamber of Agriculture (Lithuania)

Associate members

3.2 ASSOCIATE MEMBERS

Since last annual conference, 12 Organisations/Companies signed up as ICAR Associate Members

1. BouMatic Gascoigne Melotte Sprl (Belgium)
2. Neogen (USA)
3. Page and Pedersen (USA)
4. Agranis (France)
5. Leader Product (Australia)
6. JoinData (The Netherlands)
7. Y-Tex Corporation (USA)
8. Plastifran BV (The Netherlands)
9. ZTown Development LLP (Kazakhstan)

10. Tarashe Pardaze Pooya & Hadid Sanate Khavaran (Iran)
11. (Norway)
12. VAS (USA)

At the light of these recent applications, ICAR presently counts 122 members split in 78 Full Members and 43 Associate Members.

ICAR Groups

4.0 ICAR GROUPS

The ICAR Sub-Committees and Working Groups constitute the backbone and the technical arms of ICAR's contributions. They are formed by 150 experts whose action is supported by more than 100 other professionals that lend their voluntary action in the Advisory/Experts Committee. To all of them go the acknowledgments of ICAR Members.

In Prague, the Board met all the Chairs of the ICAR Groups in order to debate the latest achievements and present the future activities proposed for the 2019-2020. A picture of that meeting is reported below.

The meeting of the Board with the Chairs of the ICAR Groups where common sytayegies and cross-group actions heve been debated

Interbull

4.1 INTERBULL SUB-COMMITTEE

After 13 years of servicing ICAR as Chairperson of the ICAR Sub-Committee, Reinhard Reents resigned from the position and the new Chairperson of the Sub-Committee was elected: Matthew Shaffer (DataGene Limited, Australia) took the role and he receives the best wishes for tackling the new challenges and reinforce even more the leading role of Interbull.

Matthew Shaffer received the congratulations of the ICAR community and the sustain in his action by all the members of the Sub-Committee as well as Brian Van Doormaal that in Prague was nominated the new Vice-President of Interbull. Their action will be also hold up by the three new members of the Interbull Sub-Committee, recently appointed: Gert Pedersen Aamand, Urs Schnyder and Gerben de Jong

The previous Chair (Reinhard Reents on the right) and the new one (Matthew Shaffer, on the left) of the Interbull Sub-Committee.

Milk Analysis SC

4.2 MILK ANALYSIS SUB-COMMITTEE (MA SC)

During the last 12 months, the ICAR protocol for the validation of instruments has been deeply reviewed and presently its is under finalisation. It has been produced according to ISO 8196-3/IDF 128-3 and its revisions.

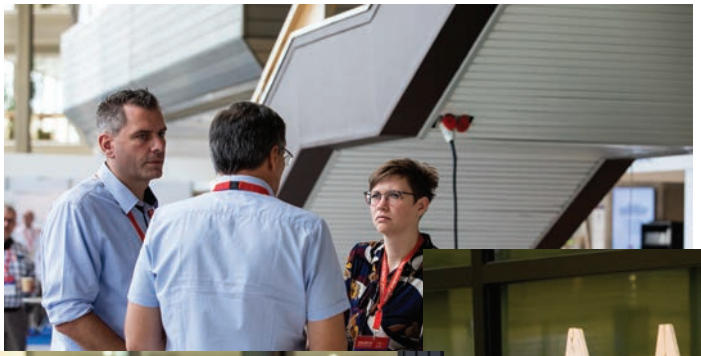
For the activities of the next year, a short Survey among ICAR reference laboratories laboratories will be carried out to verify whether if specific problems have been identified using the milk analysers..

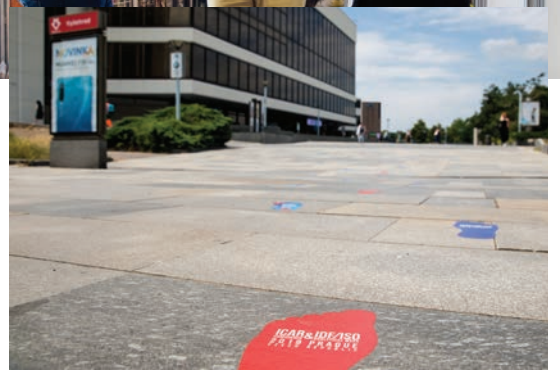
Speakers of the Milk Analysys Workshop in Prague.

Concerning the ICAR Proficiency Test for Milk Laboratories, a comparison of the rounds performed since 2016 until 2019 has been reviewed and it shows that repeatability is always below the ISO limit for the parameters, Fat, Protein, Lactose, Urea and Somatic Cells for reference and alternative method. It was also noted that the reproducibility is frequently higher than the ISO limits . To overcome this problem, it was suggested to pay higher attention to the pre-scrutinization and to interview the laboratories before the beginning of the statistical elaboration.

From 2020 for the parameter SCC, the introduction of two lyophilized samples beside the liquid milk will be operative . This lyophilized samples will be in the near future traceable to the SCC primary reference material and it will be a further quality assurance tool to check the instrument overall accuracy.

ICAR service in the 2020 will conduct a pilot example on the application of a statistical probabilistic approach con compare different proficiency testing schemes assigning a performance index to the laboratories and to the proficiency testing providers.





ID SC

4.3 ANIMAL IDENTIFICATION SUB-COMMITTEE (ID SC)

The group, for the next 12 months, is committed to continue the reviewing and finalizing the ICAR field testing protocol for animal identification devices, focusing on device retention. Furthermore, the design of relevant new ICAR services are underway.

The Group is also developing the rules for the quality and environmental performance testing of UHF ear tags, and a plan for updating Section 10 of the ICAR Guidelines has been agreed. The topics to be reviewed in 2019 include: the ear tag applicator closing force, the colour staining of ear tags, and the length of the ear tags' male pin. Finally, the planning of a 2019 Ring Test for RFID devices among the accredited Test Centres is expected to be launched.

The ID SC is also pleased that Valentina Palucci (Interbull Centre) has been endorsed by the ICAR Board as a new member of the group, adding the Interbull expertise to the common vision.

The Chair of the AI SC, Jo Quigley (on the left) and the new member of the ID SC, Valentina Palucci (on the right), from the Interbull Centre.

RSD SC

4.4 RECORDING AND SAMPLING DEVICES SUB-COMMITTEE (RSD SC)

The RSD SC is expecting to review the Guidelines on Section 11, in particular the flow chart and procedures outlined. The RSD SC is now focussed to present the revised Section 11 at November 2019 RSD SC meeting for internal approval. The revisions will be then sent to the ICAR Board and then Members for comments.

Immediately after the finalisation of this duty, the RSD SC will focus the attention to the development of standardized test plans and reporting protocols across test centres and to the revision of the software program implemented in the ICAR Test Centres.

The Chair of the RSD SC, Steven Siever, talking to the meeting of the Board and Chairs

A complete revision of tolerances for small ruminants for milk component performance criteria is also in the pipeline, together with the separation of the Guidelines on milk meters for goats and sheep, creating two different specific texts, one for each species.

Also in Prague, the ICAR Board endorsed the new naming of the Sub-Committee as Measuring, Recording and Sampling Devices

DCMR WG

4.5 DAIRY CATTLE MILK RECORDING WORKING GROUP (DCMR WG)

The Working Group is working on the finalisation of a new text of the ICAR Guidelines (Section 2, Procedure 1) referring to the computing 24-hours yields. Moreover, the DCMR WG is comparing different 24-hours calculation methods and the end of this duty is expected to be reached by 2020.

Members of the DCMR WG having their meeting in Prague.

DNA WG

4.6 DNA WORKING GROUP

The attention of the group is focussed on updating the ICAR accreditation policies for parentage testing laboratories by imposing ISO 17025 certification for STR-based testing (instead of ISO 9001) to be effective at a date in the future.

Furthermore, the group is assessing the requirements for expansion of other services using the GenoEx platform, especially the exchange of full genotypes among authorized users for purposes related to genomic evaluation calculations (i.e.: InterBeef, InterGenomics, etc.). In parallel, the DNA WG is finalising the procedures for an ICAR accreditation service for DNA Data Interpretation Centres for SNP-based parentage discovery, which then allows for a higher level of service for the GenoEx-PSE genotype exchange (i.e.: 554 SNP).

Members of the DNA Working Group having their meeting in Prague (on the left) and the new member of the DNA WG, Joanna Sendecka (on the left) that joined the group last year in July 2018.

Sensor Validation

4.7 SENSOR TASK FORCE

In Prague the Sensor Task Force had a final, joint meeting with manufacturers.

This was a very productive session with good input from manufacturers, DHI Members and ICAR's laboratory experts. As a result ICAR will now be open to applications from manufacturers who want sensors to be validated by ICAR. ICAR has committed to work together with each manufacturer's application to develop an appropriate validation field test to their sensor. This is an exciting phase to supplement our existing certification program with this field validation, which will give added assurance to our members and ultimately our farmers. T his sensor validation work will be taken over by the newly named Measuring, Recording and Sampling Devices Sub Committee and as a result the Sensor Task Force will cease to be.

The Chair of the ICAR FT WG, Christa Egger-Danner, during the meeting of the Group in Prague.

FT WG

4.8 FUNCTIONAL TRAITS WG (FT WG)

In the period 2019-2020, the FT WG will be working on the publication of Guidelines on Lameness and the publication of an update of Udder Health Guideline; the finalisation of the extension of ICAR Health Key on bacteriological findings and to the elaboration of Guideline on Metabolism.

Interbeef WG

4.9 INTERBEEF WG

In the last 12 months, Interbeef extended its services to include two more breeds (Hereford and Angus) and two more countries (South Africa and Australia). Presently, Interbeef is providing services for five breeds (Charolais , Limousin, Simmental, Angus and Hereford) and nine countries. Number of distributed International evaluations has increased from 1.4m (22 country-breed-trait combinations) in Jan 2018 to 6.8m (59 country-breed-trait combinations) in Jan 2019.

The Incorporation of cross-bred data into Interbeef evaluations has also been achieved as well as the development of new Interbeef performance records database, for up-loading, checking and extraction of data for routine Interbeef evaluations.

The development of new genotype exchange database, to support international genomic evaluation activities is one of the latest achievement of Interbeef together with a data calls for International genomic evaluations, and the development of a systems for integration of International evaluations within National evaluations.

Next duties of the Interbeef WG in 2019-2020 are the implementation of a new business plan including new fee structure and the expansion of the number of countries, breeds and traits availing of Interbeef services. This new challenge requires the establishment of a strengthened infra-structure and services to support the "pilot evaluations" for potential new countries.

The extension of Interbeef services to include two new sets of traits; female fertility and carcass data is already planned in the next 12 months as well as the extension of Interbeef services to include validation mechanisms for national (and International) evaluations.

No less importance is the extension in the near future of Interbeef services to include facility to share ID, ancestry, performance and genotypes between members and the development of a systems to support Interbeef genomic evaluations as a routine service in future.

Picture of the participants to the Interbeef Workshop held in Prague

CoQ

5.0 ICAR CERTIFICATE OF QUALITY (COQ)

Since the last Conference held in Auckland, six Consultative Reviews have been conducted of the CoQ of:

1. CRV Holdings BV (The Netherlands)
2. Polish Federation of Cattle Breeders and Farmers (Poland)
3. Quality Milk Management Systems (UK)
4. TINE BA (Norway)
5. University of Novi Sad (Serbia)
6. Vereinigte Informationssysteme Tierhaltung wV (Germany)

The Audits for the renewal of the CoQ have been 15 that lead to the renewal of the CoQ to the following ICAR Members:

1. Agricultural Data Centre (Latvia)
2. Agricultural Research Council (South Africa)
3. Association of German Livestock (Germany)
4. Association of ProAgria Centres (Finland)
5. Cattle Information System (UK)

CERTIFICATE
OF QUALITY

6. Croatian Agency for Agriculture and Food (Croatia)
7. Czech Moravian Breeders' Corporation Inc (Czech Rep.)
8. Eesti Pöllumajanusloomade Jõudluskontroll (Estonia)
9. Irish Cattle Breeders' Federation (Ireland)
10. Italian Breeders' Association (Italy)
11. Krajowe Centrum Hodowli Zwierząt (Poland)
12. Simmental (Romania)
13. Stud Book and Animal Improvement Association (South Africa)
14. University of Ljubljana (Slovenia)
15. Zentrale Arbeitsgemeinschaft Österreichischer Rinderzüchter (Austria)

Some representatives of the ICAR Member Organisations attending the General Assembly.

In the next months, three Organisations are expecting to renew or review their previous certification.

Awards

President Award

6.0 ICAR AWARDS IN 2019

6.1 ICAR PRESIDENT AWARD

Prague has been also the annual stage for delivering the ICAR Awards. Historically, ICAR awarded the President Award for outstanding leadership in ICAR activities. and this year the President Award went to Reinhard Reents. In his 19 years of service on the Interbull Steering Committee, he spent 13 years as Chair. His service to international genetics has been remarkable and under his stewardship Interbull became the recognised EU reference centre for animal breeding. Reinhard in that time also served on the ICAR Board of Directors as well as laterally making key contributions to the Future ICAR and Sensor Task Forces, making him appreciated for the competence and for vision in promoting the ICAR role and for his capacity of building connections with people. This 2019 President's award is a truly deserved accolade for Reinhard's great service to ICAR members.

Jay Mattison, ICAR President (on the left) awarding Reinhard Reents (on the right) with the President Award

Outstanding Contribution Award

6.2 ICAR OUTSTANDING CONTRIBUTION AWARD

This year a new class of awarded has also been added, the Outstanding Contribution Award, reserved for professionals that have made an outstanding technical contribution to ICAR's activities.

This year, this award has been given to Kees de Koning. Since 2011 Kees holds a position as managing director of Dairy Campus, the (inter) national research, innovation and education centre for the Dutch dairy chain, located in Leeuwarden, the Netherlands.

Kees has over 35 five years of experience in agricultural engineering, milking technology, robotic milking, milk quality, sustainable farm management, smart farming, sensor technology, quality assurance and food technology. He is also member of the Standing Committee on Farm Management from the International Dairy Federation (IDF), manager of the Dutch Test Centre of the International Committee of Animal Recording (ICAR) and chairman of the Steering Committee of the Sino Dutch Dairy Development Centre (SDDDC) in Beijing.

Widely appreciated for his passion and commitment in his work, Kees is a relevant professional in the fields of Research, Innovation, Education, Dissemination and Training

Jay Mattison, ICAR President (on the left) awarding Kees de Koning (on the right) with the Outstanding Contribution Award.

Service Award

6.3 ICAR SERVICE AWARD

ICAR also bestows the following Service Award to those people retiring from the Board or SCs and WGs. The list of professionals receiving the ICAR Service Award includes Board and Group's experts leaving their position in ICAR is as follows :

Carine Megneaud; Egbert Feddersen; Ernst Bohlsen; Eva Hjerpe; Felipe Ruiz; Filippo Miglior; Franz Schallerl; Friedrich Reinhard; Fritz Schmitz-Hsu; Gabril Balance; Gosse Veninga; Jorge Lama; Kalle Pedastsaar; Kevi Hasse; László Bognár; Marco Winters; Neil Petreny; Pierre-Louis Gastinel; Reinhard Reents; Richard Cantin; Thomas Hauck; Timo Joosten; Tony Francis.

Next Conferences

Leeuwarden 2020

7.0 CAR NEXT CONFERENCES

7.1 ICAR 2020 IN LEEUWARDEN

The Secretariat reminds that the 2020 ICAR Conference will be held in Leeuwarden (The Netherlands) in June 8th – 12th 2020. The central theme of the event will be the circular economy and its impact and challenges in animal performance recording. Leeuwarden is in the middle of the Friesland region being synonymous as the nursery of the Friesian cow. These were exported in large numbers in the 19th and 20th century and served as the basis for the worldwide population of Holstein Friesian cows. Visiting the ICAR 2020 Conference in Leeuwarden is more than just visiting a regular ICAR Conference, it's where old traditions and a smart future meet. The successful development and rapid implementation of new innovations help the farmers to improve the efficiency and sustainability of their production. Come and see how the Dutch livestock sector addresses his challenges in the strive for a circular economy. More information available on the official site of the ICAR 2020 Conference at: www.icar2020.nl

Toledo 2021 and Canada 2022

7.2 ICAR 2021 AND ICAR 2022 CONFERENCES

Following the Annual Conference planned in Leeuwarden (The Netherlands) in 2020, the ICAR experts and technicians will meet in 2021 in Toledo (Spain) and in 2022 in Canada.

Smarter Project

8.0 THE SMARTER PROJECT

Participants of the Smarter Project at the kick-off meeting

ICAR is among the 27 Partners of the SMARTER EU Project collaborating to develop and deploy innovative strategies to improve Resilience and Efficiency (R&E) related traits in sheep and goats. The project also involves the support by 30 national and international stakeholders, providing a multi-actor approach between academic and key European stakeholders, including 13 non-academic partners and various other stakeholders gathered in the stakeholder platform. SMARTER will develop and deploy innovative strategies to improve Resilience and Efficiency (R&E) related traits in sheep and goats.

At the fundamental level, the project will:

- Identify and characterise phenotypic novel measures using low cost automated devices, new recording schemes, and integrative modelling for resistance and efficiency related traits in controlled and extensive environments. These traits will include feed efficiency, body reserve mobilisation, health and welfare, lamb vigour/survival, and the ability to recover from environmental and disease challenges;
- Quantify the genetic variability of the resistance and efficiency related traits in common breeds and in hardy and under-utilised breeds well-adapted to their local harsh environments and identify genomic DNA (DeoxyriboNucleic Acid variants) and non-genomic variability (epigenetic, metagenomics and transcriptomic;
- Quantify the extent and relevance of genotype-by-environment interactions (G*E) for resistance and efficiency related traits between conventional and organic farms and between various feeding and climatic;
- Enhance the benefit of genomic selection in small ruminants by tailoring and improving models that include multi-population/breed and G*E.

Smarter

At the technological and applied level, the project will:

- Propose and validate new, low-cost predictors of resistance and efficiency related traits in ruminants for widespread phenotyping at the population level, as well as deliver genetic and genomic breeding values for novel R&E related traits;

- Develop decision support tools to be used by scientists, farmers and animal breeders for managing trade-offs and optimising useful trais of animals under a variety of challenging conditions;
- Develop tools to boost networking among breeders and breeder associations of hardy and under-utilised breeds in order to enhance and market the value of their unique characteristics;
- Develop new methods to increase genomic selection efficacy in small ruminants by including the use of pure and crossbreed populations and major gene information;
- Deliver recommendations for strategic use of new genomic tools including a comparison of efficacy and cost of using genomic tools with different SNP (Single Nucleotide Polymorphism) densities;
- Perform the first across-country genomic evaluations in small ruminants by pooling phenotypic and genomic data and creating new shared reference populations in sheep (UK, France, Spain, Ireland, Uruguay) and goats (France, Italy, Canada).

Smarter EU Project in a glance

Aim: study how genetic selection can help to increase resilience and efficiency in small ruminants (sheep and goats) in their environments and across a range of diverse environments

- **Frame** = multiactor H2020 EUproject, €7 ml€, 4 years
- **Partners**: 13 countries, 27 partners (50% academic / 50% non-academic)
- **Stakeholders**: Around 30 Stakeholder partners to disseminate SMARTER results
- **Species**: 1,5 million sheep and goats (20% of EU's livestock and impact on 70%)
- **Breeds**: 46 breeds, 40 breeding organisations, 5,000 farmers
- **Numbers**: Shared data: 500,000 phenotyped /70,000 genotyped animals

More information about Smarter can be found in the web site of the Project (here) and in the firts issue of the Newsletter (here)

Cover of the firts issue of the Smarter Project, in which ICAR is among the partners. The issue is available here