WHFF 5507 ICAR Conference in Bled, Slovenia 19/5/24 - 23/5/24

June 27th 2024 by Suzanne Harding

Background

The Council agreed that the Secretary General could attend the ICAR Conference in Bled, Slovenia May 2024, together with associated meetings with the ICAR Board and Working Groups. These meetings occurred between Sunday 19th May and Thursday 23rd May.

Board and Chairs meeting 14.00 - 17.30 Sunday 19th May 2024

The Board and Chairs meeting was chaired by Ana Granados Chapatte of EFFAB and Marie-Agnes Mourot CEO of ICAR. There was an interactive discussion about how ICAR can retain relevance in the International Industry.
Key Messages from the meeting:
1. New home page to the ICAR website - MyICAR. Password access for ICAR members. Members can exchange ideas and get notifications. There is a template for sharing information. There is also access to Wiki and to the new glossary of terms.
2. Different levels of communication to be disseminated by ICAR to the Industry and competent authorities.
   1. executive summaries
   2. technical information
   3. scientific communications
   4. farmer data sheets
3. There is some confusion around what are guidelines, standards and reference information.
4. It was asked how dynamic the groups are, manufacturers are moving faster.
5. Who are ICARs competitors? Need to get closer to them and engage with them.
6. Cost - is this a real factor? Does ICAR give value for money? For accreditation companies are willing to pay, but if there isn't any value they will not pay.
7. Three sections of work; Communication, WG Work, Volunteers to join the groups. Secretarial support will send documents to support these three groups.

20/5/24 Meeting with Marie-Agnes Mourot CEO of ICAR

I had a meeting with Marie-Agnes Mourot CEO of ICAR, to discuss the future of the ICAR Breed Association Working Group, which I chair. Apart from myself, there were no members of my Working Group attending the Conference.
I asked Marie for guidance on how to motivate the ICAR Breed Association Working Group. Should it merge with another Working Group? What level of people should be in the Working Group. What is the purpose of the Working Group?
Marie responded that the Working Group could be the focus for cross Working Group communications, co-ordination with the Chairs; plus producing three newsletters a year detailing the relevance of ICAR.
   1. following the conference
   2. at the end of the year
   3. leading up to the conference

If agreed by the ICAR Board, I would explain this new works stream to the Working Group Members, asking if they feel they could help collate information, ideas, layout, liason, etc.

As of 27th June ICAR Board have not moved this idea forward.

21/5/24 DNA WG Meeting 21/5/24 8.00 - 13.00

Much of the work of the ICAR DNA Working Group is commercially sensitive so I am unable to give a full report. The Working Group members were reminded of the ICAR conflict of interest document.
Applications and Renewals for STR parentage and SNP genotyping were discussed. These are now called lab certification not lab accreditation.
There was an update on the launch of SNP based parentage discovery. Test files ready for applicants to receive. Once the applicant has the accreditation they must upload their data, then they can download the genotypes they have subscribed to. They will only get the equivalent parentage SNPs. (200 or 544), for all subscribing countries data.
Genetic Disease Tests were discussed. It was reported that there are continuing issues with having 2 or 3 letters in the official WHFF abbreviation. The original list is really based on phenotypes. Some traits are formed by different variations of alleles, and mating programs are based on the phenotype not the individual alleles. It was asked if the academics know to report these traits. We need to separate the science from the farmers so is easy for them to understand. Labs use the scientific publication to define the condition. They need to be included in the discussion. The object is to produce a science lookup list with a translation for the farmer. We need to cater for the positive polled condition. Perhaps a small Task Force is needed to produce an outcome in a year. Is it possible that ICAR can look at how conditions are collected well. It was suggested that the Working Group could apply for a Brian Wickham young person to investigate and visit key organisations.

21/5/24 WHFF / ICAR DNA WG meeting about Genetic Traits / Conditions

Present: Romy Morrin, Ezequiel Nicolazzi, Brian van Doormaal, Matt McClure, Tom Lawler, László Bognár (zoom)and Suzanne Harding.

Roles of the entities within Europe and the rest of the world was discussed. It was agreed that the stakeholders include laboratories. Farmers need a mapping tool between the lab code and farm coding nomenclature.
Testing of carriers – it was suggested that we could go to the labs and find out the frequencies of genetic conditions – could we do a survey?
It was stressed that the WHFF Monogenetic Working Group need to get BLIRD and Muscle Weakness agreed. Classifying conditions as lethal, decreasing performance, etc. - Action / Monitor / Low Frequency / NIB (not in breed) was suggested.
A comment was made that in North America they want to identify and manage conditions. Maybe in Europe they want to label and then not use the genetics, but then many good genetics are potentially lost.
It was stated that Intellectual Property is important for research on the traits.

Following the previous meeting, the DNA Working group are waiting for the Board of ICAR to decide if we can have a young person to investigate the possibilities of genetic conditions.

21/5/24 INTERBULL Business Meeting

One session attended -
WHFF genetic exchange through INTERBULL promoted by Toine Roosen.

Toine reminded everyone that INTERBULL is the EU reference centre. He said that we need to identify the roadblocks to using the genetic exchange mechanism. Brian van Doormaal thought that it was mostly project prioritization - Matthew Shaffer agreed.

Toine Roosen said that we need a new timeline for new traits and trait groups. 2 patents had been taken off the table from SRUC and Victoria.
There had been cyber attacks on genetic evaluation units. He stressed that everyone should check security on IT systems.

22/5/24 ICAR General Assembly

1. Welcomes
    1. Welcome from Marija Klopcic.
    2. Welcome from the Minister of Agriculture.
    3. welcome from the vice Dean of Ljubljana University, Tatiana Pirman
    4. welcome from President of the Council of Slovenia
2. Welcome by the President of ICAR Daniel Defevre
    1. Thanked Working Group members for all their hard work throughout the past year.
    2. 15 Working Groups with +190 members involved
3. Certificates of quality to WHFF members
    1. Polish Cattle Breeders (President ….)
    2. Agnculvran Data Centre, Latvia (Erna Galvanovska)
4. Marie gave a precise of the WG / TF and SC
5. Joao - governance - chair election
    1. Daniel Lefevre the President extended his presence on the Board for two more years.
    2. Stanistov Jas, is the new CEO of the Holstein Cattle Breeders Association of the Czech Republic and was elected onto the ICAR Council was elected as an ICAR Council member.
6. Next Conference 29/3 to 4/4 2025 in Anand, India

22/5/24 - Plenary session

Ana Granados Chapatte and Harald Sverdrup - Sustainability breeding strategies; what does it mean?

1. Define / assess / social impact
2. Sustainability of food production is a system property. Products form a system on farm.

3. Principles of sustainability
   1. Limits of growth
   2. ecological niches
   3. economic sustainability
   4. social system principles
4. Sustainable access covers many aspects
   1. mutual supply
   2. environment
   3. economics
   4. social
   5. system level farms
   6. social in situations
5. Animal and plants are linked
6. Some environments cannot survive without animals eating plants and transforming them into meat. eg Iceland
7. Alpine is the best carbon sequester in Europe because of farm management Oil is the real cause of climate change.
8. Blame is always on the farm - LCA (Life cycle assessments) metrics do not include agriculture and so it is not a good measure to use.
9. Policy makers
   1. CAP in EU and sustainable farm systems
   2. They do not have a holistic approach
   3. Need an evaluation impact on the system
10. Challenges of diversity - get slide once published
11. Communication has not worked, science in the field has not been communicated to the policy makers.
12. EU propose to remove 60/70% of livestock in Europe, this is emotive
13. In Nordic countries if this occurred
    1. Self sufficiency of the country would reduce from 49 - 14%
    2. Loose production value
    3. Small gains in carbon sequestering
    4. Carbon sequestering would reduce (contradicts point above)
14. Implementing a plant diet
    1. EU becomes a net importer of all food by loosing animals
    2. National security becomes worse
15. Conclusions - get slide once published
16. How can we make the systems approach work? stop being reactive - be proactive. Take initiatives and make proposals.
17. We need a system approach
18. Communication arena produces balanced breeding.

Marleen Broekhuijse - New ICAR Service to standardise Bovine Semen Quality Assessment

1. Male management
2. Semen processing
3. Collection
4. Quality control
5. Reporting fertility

6. Motility - traditional way of deciding if the semen is 'good' - but no gold or international standard
7. Now can calculate the mobility using a CASA system. but there are many CASA systems.
8. Different CASA systems will give different results, even with the same sample of semen

Brian Wickham Young Persons Exchange program (BWYPEX)

Proposals
1. put a young person into each WG / SC / TF
2. have a young person observer on the Board

22/5/24 - Data Collection for Beef on Dairy

1. Jo Newton - Overview: data collection for beef on dairy
    1. Beef on Dairy is a win win situation - higher value calves, new markets for beef genetics, low carbon footprint
    2. What happening globally? it is fragmented.
    3. Semen sales of beef and sexed dairy increasing, but different by country.
    4. Successful beef on dairy needs collaboration, genetics very important to support farm mating but data is a key barrier.
    5. Few combined beef and dairy data bases, need calving traits for beef on dairy
    6. Need to monitor trends, validate existing tools, develop new tools
2. Kevin Byskov - Experiences from collection of feed and methane data form beef x dairy calves in Denmark
    1. Goal to develop new breeding values for new traits in Nordic countries
    2. Feed efficiency, lower methane emissions and eating quality
    3. To get new registrations have 12K calves with dairy dams and beef sires
    4. Need to motivate day farmers to use beef sires - logistic challenge, etc
    5. 5 commercial herds measuring feed intake and methane concentration
    6. 5000 cows to test a year
    7. Feed stations - dry feed and TMR measured for each cow. Enter the at trial 4.5 - 6 months old
    8. Body weight is measured when enter and when leave the trial at about 21 days
    9. Feed alarm lists to show calves that are not identified correctly, antenna failure, etc.
    10. Measuring methane by sniffer.
    11. Monitoring methane concentration. Feed bins can be with little methane - eg mice had nibbled the wires.
    12. Motivation of farmers - can see which calves are eating too little, etc.
    13. Challenges - estimated heritability .35 test day model .20 for 200 - 260 days.
    14. FBC traits are even more important now, much potential, need tools to create genetic improvement
3. Brian Van Doorman - An alternative solution for supporting beef on dairy genetic selection decisions
    1. Farm strategies have changed over the last 5 years
    2. Genomics increases accuracy, sexed semen, beef sires for the lower half of the herd
    3. Canada is increasing the numbers of beef on dairy

4. What is needed
   1. performance data includes calving are, sort weight, growth traits, carcass yield and quality traits, dry matter intake and feed efficiency
   2. also need pedigree data
   3. need to genotype crossbred calves plus their dairy dams
   4. build a pipeline to routinely calculate a wide single step genomic evaluation system
5. Defined Lactonet role - will expand information data collection for beef cross bred calves
6. Grow genetics expertise, teach Dairy farmers to use Genomics
7. Not investing in development of genomic evaluations, they have partnered with AGI (Angus breed) 75% of semen used in Dairy crosses are is black Angus
8. AGI is a service provider for US, AUS, and Canada. They have key genomic enhanced traits that are of interest. Already have an index for using Angus on Holstein and on Jersey
9. Low cost for Lactonet, avoids duplication, partnership is advantage.
10. AGI get third party recognition, new market through Lactonet, it is an example of a model for the evaluation centres.
11. Need to collect the data, put through AGI eval system.
12. These calves are a terminal cross

4. Ross Evans - The evolving landscape of beef from the dairy herd; a perspective from Ireland.
   1. This year more beef semen was used than dairy semen
   2. Sire recording highest with dairy
   3. Insemination trends - dairy lowering towards beef inseminations
   4. Dairy index has included beef merit for 20 years
   5. Looking at dairy / beef index, mating advice, commercial beef value
   6. Plus engaging with advising vendors to try and drive efficiency on management side
   7. Index launched 2019 includes dairy, carcass and carbon
   8. Progeny testing still happening - dairy sires, beef on dairy and beef on beef
   9. Initiative with meat processors, genotyping, sensory attributes of meat, climate
   10. Other initiatives - building a methane PTA, improving male fertility

5. Martino Cassandro - Use of beef semen in Italian Holstein Cows
   1. 52% of beef produced, costs 1Billion € to buy in
   2. Increase the weaned calves produced in Italy
   3. 30 cattle breeds but Holstein the most recorded
   4. 2 herd books - Holstein and Jersey. 1.5M cows
   5. Insemminations are reducing so use beef on lower cows in the herd
   6. ANAFIBJ used data of calving
   7. Beef on Dairy is very common in Italy, Holstein use it a lot, farm profit can benefit by having the carcass at end. It has impact on still birth, calving ease of dam etc

6. Randie Culbertson - Beef x Dairy; the US beef perspective
   1. US beef industry is very segmented. Beef calves go onto a feed block
   2. Packers have control over premiums and discounts
   3. Traits are not recorded after leave herd - calf weight, marble, ribeye and fat - so evaluations are difficult
   4. If have calves coming in from another system it is difficult

5. In US calves from dairy origin is 15-20%, the genetic nature has changed since 2017 - they are using AI in the Dairy system
6. Incentives - huge prices for calves. 500 / 600 $ per head
7. If just use beef semen it significantly increased the calf value
8. Feeding - cross animals can have liver abscesses - this needs to be addressed.
9. On dairy choice of breeds - farmers decide based on cost, conception rate and calving ease. They are not interested in marbling EBV, etc.
10. Genetic evaluations - IGS Beef x Dairy carcass records
11. Issues are missing heterosis, abcess issue
12. Changes that dairy farmers are seeing the value, of better calf care, not needing so many heifers, feeding the calves themselves.

From the discussion:
In Australia they have no data - beef calves disappear off the system, so working with software manufactures to improve this
In Denmark missing some health data
How to incentivise farmers? Start an education element. Used to be based on calving ease, etc but now the dairy farmer is not just a dairy producer they are contributing to other products.
In Italy try to get data from sexed semen company and slaughterhouse. There is a problem to identify individual sires. It is tricky to join up the data.
The question was asked if everyone is seeing liver abscesses? Yes - in Ireland 5/6 years ago had a evaluation for liver fluke. in Italy BVD it is the big issue. They are providing an interbreed evaluation

23/5/24 - Session 1a Decision support Tools of the Future - promoting sustainability farm management

1. Robert Fourtraine - Heifer Hub - a decision support tool to forecast sales of beef calves and future heifer replacements
   1. Use of beef semen continues as is profitable
   2. Challenge is to plan to make sure that there are enough replacements.
   3. When can farmers get the maximum return on the beef calves
   4. Need informed culling
   5. DRMS has key values to help farmers manage these decisions.
2. Valentina Ferrari - Optimisation of dairy herd replacements combining conventional, sexed and beef semen in mating programs.
   1. aspect on heifers
      1. mortality
      2. age at 1st calving
      3. body weight
   2. AI advancements
      1. genomics
      2. sexed and beef semen
   3. how to decide
      1. replacements needed in the herd
      2. which animals to breed?
   4. Tool - inputs of herd size and replacements are needed as well as conception rate, pregnancy losses, age at first calving, etc.
   5. Need to balance beef and sexed semen depending upon market conditions.

3. Yura Pekov - Development of a analytical tool for animal genetic progress assessment based on EBVs and results of its on farm implementation
   1. How to persuade farmers to use genomics
   2. Farmers may think just for Bulls
   3. Knowing the female index will help when mating the cows, allowing the farmer to better mate the cows
   4. Genetic merit will then increase
   5. Brian comment - also farmer will engage because of getting genetic defects and inbreeding information.
4. Wim Schielen - The dairy farm management monitor; a lab-driven system for sustainable farming, prevention of diseased increased lactations
   1. Farming basics - 5 basic blocks
      1. drinking water
         1. chemistry and bacteriology can show biofilm, etc
         2. pH, NH4, Cl,, etc
         3. bacteria
      2. pregnancy / semen
         1. pregnancy test individual samples
      3. silage
         1. toxins (eg bird shit on silage)
         2. alfatoxin M only tested for as other toxins can be dealt with by the cows' rumination
      4. feed uptake
         1. essential minerals
         2. tested for Mg, SE4+, Zn, Po4, Ca
      5. disease
         1. Monitor based on milk lab tests
         2. Bulk milk tested
         3. each week test for virus (eg BVD)
         4. every other week for bacteria (eg Salmonella)
   2. All data is presented to the farmer in an APP with a farmer and vet view.
   3. Can compare the values to other farms - Benchmarking
5. Anna Stygar - Digitised data sharing strategy for decreasing administrative burden - how data will be utilised in the Digi4live project - get presentation
   1. 16 participants, EU funded
   2. Aim is to Improve animal tracking
   3. 6 areas
      1. health and welfare
      2. resilience and transparency
      3. animal trading
      4. breeding
      5. environment
      6. policy / administration
   4. Data Act for EU
   5. By 2025 data will be available to farmers from the manufacturers - they cannot refuse to send, but they may charge.
   6. The person collecting data on a device has the right to the data - so the farmer has the right to use the data
   7. But how can the farmer benefit from this new law?

8. If data is collected on farm from two parlours they must be able to send data between parlours
9. Aggregated data is not in this act

Session 1b Decision support Tools of the Future - promoting sustainability farm management

6. Asha Miles - Proposing a new US dairy herd sustainable metrics platform
   1. Building on the sustainable work already done by ICAR.,
   2. About 10K herds divined into regions (hot to cold), size of herd (<249, 250 - 999, > 1000), breed (HO, JE, AYR, BS, etc)
   3. Webpage for farmers to use for their herd
   4. Will expand to other sustainable traits
7. Jo Newton - Stakeholder engagement to support the development of next generation decision support tools
   1. positive support for next generation decision tools
      1. genetic effects - Breeding values
      2. non genetic effects - location no, calving date
      3. farm systems - feeding systems, climate
   2. goal is to align tools to farmers needs
   3. have data connected, data dippers (sometimes use the data) and data disconnected user groups
   4. data silos are a real problem
   5. want to decrease data entry
   6. in Australia no single database with all data
   7. tool needs to handle this variation in data - mating or culling tool?
8. Arnaud Delpaeuch - New algorithm to plan easier and faster weighing for French Breeders
   1. algorithm to plan better weighings based on weighing sessions
9. Harm-Jan van der Beek - Different types of Benchmarking of International datasets from dairy farms
   1. Source of data
      1. reliability
      2. stats checks
      3. are KPIs always calculated in the same way?
      4. permission to use data
      5. is data converted
   2. Conditions can change the data
      1. external conditions - climate, disease, government
      2. internal conditions - new barn, new herdsman, switching to automatic parlour.
   3. Different ways to benchmark between farmer and groups of farmers, locally or in different countries
   4. Have respect for other Industry partners - do not capitalise on data from partners
10. Mike Lynch - AgNav - a tool for putting climate action planning in the farmers hands

23/5/24 - Factors affecting the accuracy of the recording day

1. Kirsi Leppikorpi - Factors affecting the success of test milking and milk sampling in milk recording on Finnish farms
   1. 1300 AMs farms , 28% of all milking farms
   2. Robots increased to 80% robots
   3. Need
      1. accurate identification, and tie up to the correct cow sample
      2. sufficient good quality milk for analysis.
      3. to find out the challenges in AMS milk sampling
   4. Did a survey of Robot farms with 462 responses
   5. Challenges - human error, incorrect milking times, overfilling vials, empty vials, etc
   6. Milk sampling was thought to be very important
   7. Cleanliness and power cuts were a problem
2. Christian Ammon - Possibilities for estimating milk carry over during milk sampling in AMS
   1. Milk sampling on AMS during ICAR test
   2. What can go wrong - bad sample, homogenisation, carryover, etc
   3. Modelling carryover, many prerequisites
3. Justin Frankfort - car over contamination of milk recording samples; learning from the past to improve sample quality of the future.
   1. Sub group to find actions for MROs to reduce carryover, producing best practice guidelines.
   2. Undetected carryover can distort results for disease such as Johnes and BVD, pregnancy tests, as well as milk sample results.
   3. Misdiagnosis of the milk sample - remove healthy animals, reduce the value of Milk recording for farmers
   4. Looking at SOPs, training farmers, ensure equipment has no carryover to follow SOPs
   5. Everyone needs to know why it is important
   6. Promote ICAR certification to farmers
   7. Johnes in UK
      1. detectable once 4-5 years old
      2. test 150K samples per month
      3. present for about 50 years
      4. major milk processors require this testing
      5. based on Danish traffic light system
      6. as far as possible manage rather than culling
      7. if get J5 animals they have to be culled
      8. data is available through the web portal
      9. action lists showing which cows have got Johnes
4. Matthew Thompson - From milk recorder to bulk tank
   1. Important
      1. Test day milk recording is reported and sent to create Breeding Values
      2. Bulk tank is reporting and used for farm milk price calculation
   2. Farmers looking at both set of reports and there may be a mismatch between bulk and test day results
      1. quantify values
      2. identify factors causing this discrepancy
   3. Comparison showed that

1. fat% at milk recording is underestimated compared to bulk tank, same for protein, but less so
2. compared fat% at milk recording to the bulk on the same day and fat% before and after milk recording, there wasn't a huge difference, but the same day was slightly better correlated. As you would expect(?)
3. Trends were analysed - recording meter type - EDIY and manual meters - there was variation in meters but not much difference. Milk recording was underestimated on EDIY
4. Some impact of test day yields
5. No impact of seasonality
6. BUT
   1. are we comparing like with like? (several milk recordings in the bulk tank)
   2. assuming bulk 100% correct
   3. what is an acceptable level of error?
   4. several contributing factors - variation in meters, servicing, certification
   5. need to look deeper
4. Next - on farm trials test day analysis
5. Xiaolin Wu - A case study of three times milking farm

23/5/24 - Genomics impact on Livestock sustainability

1. Peter Dovc - Milk cell transcriptome in mammray gland research
   1. Framework of ducts with different cell types
   2. Need high quality material - evasive using biopsy or milk somatic cell globules, anti body capture.
   3. Proportion of epithelial cells and somatic cells differs amongst species
   4. Which genes are expressed in the mammary gland? about 9000 genes expressed,
   5. get presentation when available
2. Mark Waters - Unlocking Genetic Potential; national genotyping programme for the Irish Cattle herd
   1. In Ireland agriculture accounts for 75% of all agri emissions
   2. Effect of genomics is increasing genetic gain
   3. Rewards of genomics - can be as much as 400%
   4. ICBF has > 3M genotypes, 350 - 400 more per year but only 6.5% of the national dairy herd are genotyped.
   5. How feasible is it to genotype all calves at birth? Pilots scaled up to 600 herds in 2023.
   6. Double tissue tagged for BVD and genomic sampling
   7. Phase 1 June 2023 joint genotyping program launched.
      1. recruiting herds to the program, with the aim of genotyping remaining herd
      2. using media, tv, podcasts
      3. 10600 farms signed up and were given genotags, 780000 calves genotypes - all funded by Irish Dept of Agriculture
      4. now >4M genotypes in ICBF data base and 35% of the national dairy herd are genotyped
      5. genotyping completed at Eurofins and Weatherbys
   8. Phase 2 January 2024
      1. all calves genotyped at birth with dual tags

2. cost of genotyping split between farmer, industry and Dept of Agriculture
3. currently have 600000 calves processed from 2024

9. Parentage errors were predicted and prevented in dairy and beef herds, changed sex, breed changed by genotype analysis.
10. For animals with no sire details they could work out the sires for 83% of those animals with missing sires
11. All of this was achieved by the time the calf was 13 days old at which time it also got a Genetic index
12. Next - the farms in the project will continue to tag the new animals until 2027

3. Marija Spehar - Use of genomic data in sheep breeding
4. Yaniv Lavon - Kappa casein in Israeli Holstein Cows