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Challenges and consequences of changed management systems and increased herd size

Summary

The ongoing rapid development in size of milk producing units requires well defined goals, standards and routines to enable all parties with interest to work efficient. International Guidelines are essential, and for this purpose ICAR plays the major role. For this reason this paper gives the reader a basic and historic review of ICAR.

In relation to EHRC especially the breeding part is important.

Later in the paper a number of issues related to recording and challenges in our services, are described more detailed.

Everyone is thrilled by high level biological and computer technology. We should not forget that without a milk meter and a sample for analysis we have nothing to work with. For that reason we must focus on the routines where data is born. Recording and sampling will develop and new services will be developed.

This is a challenge for everyone involved – the dairy farmer, recording and breeding organisations, herdbook, ICAR organisations, manufacturers – is to cooperate and develop for the benefit of the total industry of milkproduction.

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What is ICAR?

ICAR was founded in 1951 as the European Milk/Butter Recording Committee. This was a natural, but late, follower of some attempts on a meeting in Paris back in 1923, where the first initiatives to set up standards for milk recording.

Long before that, the first dairy performance recordings for Holstein cattle started in USA in a very small scale as far back as 1883. In 1895 as many will know, the first routine milk recording was organized here in Denmark.

We still need to remember that all the initiatives were based on the goal of giving the farm family a better economy. This overall headline is still the same.

The aim of ICAR is to promote the development and improvement of the activities of performance recording and the evaluation of farm livestock.

1. The Object of ICAR, an international or non-profit body, shall be to promote the development and amelioration of performance recording for farm animals and their evaluation, such Object to be achieved through the establishing of definitions and standards for measuring characteristics having economic importance.
 - a) ICAR establishes rules and standards and specific guidelines for the purpose of identifying animals, the registration of their parentage, recording their performance and their evaluation, and publishes the findings.
 - b) It provides incentives for concertation and collaboration in all activities having to do with animal performance recording and evaluation within and among international organisations, public authorities and industry;
 - c) It encourages the use of the findings of performance recording for the purpose of assessing the value of animals and establishing specific codes of conduct, given that both aspects have a bearing on the profitability of animal production.
 - d) It facilitates the interpretation of findings at the practical level by publishing reports showing the results obtained through the application of methods of performance recording and evaluation.
2. The association has also as its aim the drafting of articles, publication and distribution of journals and books, the organisation of seminars and workshops, and granting scholarships to selected researchers or students.
3. Within the scope of its activities, the association can enter into any transaction having to do with movable or immovable property where such transactions are in pursuit of its aims.
 - ICAR (International Committee for Animal Recording) is the World-Wide Organization for the Standardization of Animal Recording and Productivity Evaluation
 - ICAR is a Non-Profit International Non-Governmental Organization
 - ICAR is Registered in Paris (France)
 - ICAR Secretariat is Located in Rome (Italy)
 - Introduced the Milkability (1963)
 - The First Attempt to Introduced Computerized System was done in the Early 60s
 - The Importance of Recording Devices for Milk Recording Precision (1968)
 - First Studies and Relative Application of Simplified Recording Methods
 - Other Types of Animal Production Began to be Introduced (Beef Cattle, 1982)
 - Interbull Became Operative (1988)
 - Early 90s ICAR Began the Interest of other Species, as Sheep, Goats and Dairy Buffalo
 - New Technologies are Sharply Changing the Traditional Methods of Milk Recording
 - 2007 it is decided to establish a Interbull evaluation of breeding values for beef breeds

Persons governing ICAR

The function of ICAR is based on voluntarily contribution from member organisations. People active in the many Sub Committees and Working Groups, are all representatives of the members, and represent the farmers behind these organisations.

Interbull

Interbull was developed in 1983 as a joint venture between ICAR, the European Association for Animal Production (EAAP) and the International Dairy Federation (IDF). At this time, increasing trade in semen, embryos and livestock had led naturally towards breeders wanting to make accurate comparisons between animals, primarily bulls, performing both within and across countries. However, these comparisons were made difficult by :

- differences in genetic evaluation methods;
- differences in breeding objectives;
- differences in genetic levels;
- differences in farming environment.

Since then, the international exchange of information provided by Interbull has helped member countries to develop more effective methods for genetic evaluation of cattle.

Interbull became a permanent sub-committee of ICAR in 1988, supported by its parent organisations EAAP and IDF, and also the FAO. Following a call for tender the Interbull Centre was established in 1991 under contract with the Swedish University of Agricultural Sciences in Uppsala, Sweden, and with financial support from the Swedish Farmers' union, the dairy industry and the Swedish Agricultural Board.

The first international evaluation took place in August 1994 and included milk production data from the Nordic countries for the Holstein and Ayrshire breed groups. Half a year later the second Interbull evaluations was conducted including milk production data from nine countries.

In 1996 the European Union (EU) appointed the Interbull Centre as the community reference body for bovine evaluations.

The tradition for international cooperation is very long, and is based on professional skills, personnel network and open discussion. This is very important, and without this attitude, the gained results would not have been possible.

ICAR has over the years established very strong relations to other international bodies, e.g. ISO, EU, IDF and breeding organisations on national, breeding regional and world wide level. These links ensures that whatever the topic is, it will be handled by the best suited body, and also ensures that no parallel work is carried out.

ICAR development and continuously adjustment

Today's and future of ICAR

ICAR plays to day a major role in setting standards on a very broad field related to animal husbandry. ICAR is the natural meeting place to develop new standards, procedures and guidelines for technical issues on its field. The main topic is to convert science and technique into

practical solutions to be used either/or by member organisations or farmers. The development depends on everyone's contribution.

The herd manager still needs precise, actual and relevant information's. Looking on the tools available for the farmer to monitor and manage the herd, to days options are much more sophisticated, and the need for detailed standards on a high technical level is increasing.

All the information's presented to the dairy farmer, is based on a summary of data captured through the process. Processors inside the equipment are to an increasing degree protected by patents and other rights. The work to define and set standards, becomes more and tough and sensitive, and can only be carried out through positive and open discussions between ICAR and manufacturers.

It is not the role of ICAR to define the details. Our job is to rule out the main road, and to adjust Guidelines and other standards to the actual technique. This will all be in coordination with experts within every single field.

What are the modern dairy farmers facing?

In all parts of the world, development of society also has an impact on primary farming. The distance from the farmer to the consumer will be longer, and consumers evaluate farm products as any other commodity. Feelings and remembrance to own life and childhood is only for the few. Life is getting urban and selfish. Products must meet market standards and price. To meet these demands the farmer must adjust both mental and professional. He or she moves from traditional farming to business thinking.

The basic farm management and economy

Most of the day to day management can easily be handled by on farm software. Alarm lists, to do lists, activity etc., is the tools. As we move into planning and budgets, a number of external sources must be drawn in. It is not possible to operate any business on a stand alone computer.

Staff

Managing staff becomes more and more relevant and important. Staff must be attracted by modern set ups, professional management and must feel themselves as part of operation. In some regions it is hard to attract staff, especially well skilled. Engaged staff want professional businesses. Staff and manger have a common interest in benchmarking against other enterprises in the area, same breed, herd size etc. For this purpose, comparable information's are essential.

Another relevant staff group is those employed by the recording organisations. We must ensure that our field staff is well educated on equipment and data handling. The more cows in the herd, the bigger the interest from the farmer to outsource the practical recording.

Breeding

Traditional breeding is well known. We choose a bull for the cow, wait 3 years to see the first recording, and then see what happens. Moving into new techniques, we may chose sires on DNA or similar knowledge right from birth, and know more or less the result. In such a system we theoretically do not need the recording data. In real life it may be of interest to check production, and compare against the theory.

Everyone who works with cows – recorded or not recorded herds – does have an opinion of what a good cow is, and what the ideal type is. It is as evident that any farmer does some part of breeding. The cow we like to see in 5 years time, is the cow we through collected data, can select today.

There is so far no alternative to recording. Though it will change, well-known services will be phased out, and other types and frequencies will come in.

Documentation

Modern dairy farms involve huge values, invested capital (in some cases mainly by loan), risks by physical damage or veterinary threats.

A lot of eyes from various fronts and different interests will keep an eye on economy and biological production. Each of these eyes will ask for independent and approved information's. Regional or national databases and calculations based on international accepted principles, such as ICAR Guidelines, is the best insurance, and will protect the individual production unit.

Capacity

The traditional dairy farm where every single animal could be recalled in the portable memory in the farmers head is of the past. To day it is all about capacity. Kg milk milked per hour, square meters per cow, tough and sharp balance on in- and output etc. In connection with breeding, we see a lot of focus on milking time and health. Slow milking and poor health is part of this question. Collecting data related to both issues, is part of the investment in the future production.

New technique

Related to capacity are a lot of new developments in all kinds of technology. Milking robots, activity measurement, milk meters, parlours with fast entrance and exit, and advanced systems for directing cows around the barn. Safe, unique and fast identification of the individual animal is essential in these systems. Some of these information's are part of the link to the external environment, and must also for that reason be well defined.

The dairy farmer or –producer, is becoming a sort of “networker”, and must consider a lot of links to internal and external partners.

Commercial products for analysing on-farm or even in-line are on the market. Some like to link these products to a discussion of recording or not. No matter the technology and equipment producing the results, guarantee for correct information is well defined and widely accepted standards. The key question is not recording or not recording, but reliable data transferred into valuable information's. There is no conflict between new methods and recording. A possible conflict is the same as have for decades – do we have reliable data?

Data handling

Every day a modern dairy farm catches huge amounts of data. Some of them are directly transferred into alarms or notices for the daily management. Others are stored without any attention. Those of us who work at the desk, does not pay much attention to the fact of back up of data. We have an organisation to do this for us, and in most cases a colleague will help when things go wrong.

The dairy farmer must be aware that his whole operation is based on information's on the pc. If this breaks down, the base for decisions have disappeared. There is a need for central back up. Not to give away data, but simply to protect the individual production unit.

Recording associations with skilled and professional data- and cow knowledge are the ones best suited for this task.

The real challenge

Discussing the issue of recording and sampling with dairy farmers, it is hard to find someone who denies the value of the service.

The doubt comes in when we discuss practical solutions. They find it time consuming, difficult and not very attractive job.

As recording organisations, our main task today and in the future, is to provide the field staff with simple and efficient solutions.

The tendency has been to put main focus on the value of data and information's. This is final goal, but is not possible without the basic service.

Data- and sample logistic are the keys to secure farms within the recording services.

Recording and sampling – while we milk

The topic can be divided into two very different sub groups, automatic milking, and other systems.

The overall main issue is to catch reliable and valuable data in a way that disturbs cows, milkers and equipment as little as possible. The challenge is increasing at the same level as the size of parlours, number of milking robots, and cows per hour.

In both systems the real challenge is to get a representative sample, and to find procedures and tools to ensure a qualified job.

- A representative sample
- Correct identification
- Easy and logic method

Robotic herds

Automatic sampling is not the same as simple and cost effective solutions. When the first robots went out to farms 10 years ago, it was normally 1 or 2 boxes. To day we see a lot of projects with 4, 6 and more boxes, each of them carrying out 150-180 milkings per day.

In a 1-box herd, it is relatively easy to handle samples and data, but as we move upwards in numbers, it soon reaches a level, where most farmers find annoying and time consuming. It must be semi- or fully automated.

It is not easy to change the samplers from various companies, and therefore recording organisations must pay more attention to the handling.

The experience in Denmark is that all parties involved in the process, is interested in the topic, and we have developed different systems for different makes. Part of it is related to the actual sampling and data handling, but as important is the service we provide.

We own all the samplers, and have technicians who take care of all the field services. We offer services where we mount the equipment, does all the data- and sample handling, cleaning etc. It is our experience that most farmers when they reach a certain level of cows, find it attractive to hand this job to skilled technicians. The alternative is to pay one of their own employees for it, and they may not be suited for it.

Sampling in traditional systems

Well proven manual systems have been approved over the last decades, and shown their ability to help us through the process of data capture. These systems are well working, reliable and relatively efficient up to app. 90-100 cows milked per hour.

In today's parlours, with frequently up to 300 cows per hour, total different procedures are needed. At the same time, the herdsman's/milkers knowledge of the single cow, has vanished as the herd went bigger.

The following points are crucial and necessary if we want to create usable data for later information:

- Cow ID
- Sampling (safe link cow to physical sample)
- Correct and representative sampling

Conclusion

- Recording and data collection to the benefit for producers as a pool is essential for the dairy industry.
- A farmer does in general not step out of recording, or decide not to participate based on lack of interest, or because they find the information's irrelevant, but because we as organisations do not match the way they work.
- The biggest danger for the recording is that we in the organisations (local, regional or international), shows unable to develop actual and efficient solutions. Looking around in the world of recording, there is no doubt that some of us need to rethink our services.
- The survival of the recording is very closely linked to way we approach the development on the expanding farms.
- Traditional arguments of recording for breeding, does not have much value in the main part of dairy industry. We must rethink our arguments, and not forget the value of breeding. If information's are valid for management, we can easily use them in breeding as well.
- If international standards do not match the needs, they must be adjusted.
- There is a lot of potential out there; we just need to listen to the grassroots.