Milk-Recording Guidelines 2016 – New Standards for a New Era

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Abstract

The ICAR Dairy Cattle Milk Recording Working Group has finished revising the ICAR Guidelines for dairy cattle milk recording. The work has taken three years with input from many specialists inside and outside the working group. This part of the ICAR Guidelines concerns the core process of many member organisations, defining how observations are made on the farm and how tdata are collected, analysed and reported back to the farmer.

ICAR members operate in a huge variety of situations, ranging from almost automatic recording systems to places with no roads and electricity. Therefore, the new guidelines only demand standards that can be followed everywhere, and recommend more advanced options. They also forbid some practices while permitting some other practices as tolerated but not recommended.

The new guidelines are designed to form a chronological whole, starting from enrolment in milk recording, and ending on reporting and quality maintenance procedures. A lot of work has been done in defining practices and figures, e.g. sampling schemes and herd average yields. This work is also behind the decision not to include a separate subsection for robotic milking – a milking robot is just a special kind of milking equipment, and not the object of milk recording.

milk recording, dairy cattle, data capture, yield calculation, reporting, recording methods, quality maintenance

Introduction

The ICAR Guidelines on Dairy Cattle Milk Recording have recently been updated several times by adding items to the existing general structure as they arise. In 2013, the Dairy Cattle Milk Recording Working Group decided it was time to rewrite the whole text, placing special emphasis on the new technologies and on the consistency of the text. The subsections were also changed to

create a more logically chronological text. The work is now complete, and after several checks inside and outside the working group, the text is now being presented for approval.

The introduction to this section of the Guidelines defines what is meant by milk recording and what is not included in these guidelines (recording devices, ID devices, milk analysis).

Recording

This is the main subsection that covers practical aspects of milk recording on the farm. It begins with authorisation to record and ends with transport of milk samples. Most of the text is new but any new standards are usually written in the form of recommendations. The paragraph about the cows to be recorded is more specific than before and states explicitly that cows can only be excluded from milk recording if they are never milked on the same farm again. The old guidelines on missing results and abnormal intervals are also included in this subsection.

This subsection also presents standards for the identification of the recorded cow, herd, and sample vials. New technologies have brought many sample identification methods that are taken into account here. Different options for combining the milk weights with the sample are also presented, depending on the sampling scheme. Most of the text here is new.

We also have here a new part that contains a list of traits that have to be recorded in official milk recording, and traits that are recommended for recording. The list is quite basic and should not come with too many surprises for any of the member organisations.

Also, this subsection deals with the symbols used for expressing the milk recording method carried out in the herd. The standardisation of sampling schemes is a novelty in this subsection, presented in Table 1.

Table 1. New proposed sampling schemes

Sampling scheme	Milkings		Description
	Sampled	Recorded	of the method
P	2	2	Proportional sample
E	2	2	Equal sample from each milking
M	2	2	Separate samples
Z	1	≥2	
T	1	1	Alternate milking
C	1	1	Always the same milking
I	Continuous analyser, no sampling		

After that, standards are set for data files obtained from electronic milk meters in different milking systems. The basic data set includes cow ID, milking time stamp, milk weight and sampling stamp, while certain other pieces of data are recommended. The daily yields must be calculated by the Milk Recording Organisation, not by the equipment.

The last part of the subsection is for systems where both milk weights and constituents are monitored constantly and automatically. Though no such systems are yet ICAR approved, it probably is just a matter of time when the Milk Recording Organisations will have to make decisions on how to use this kind of data. This subsection is designed to help in establishing sufficient demands on the system and receiving sufficient data quality.

Database

This subsection sets standards mainly on the type of data necessary to include in the records and on the minimum necessary checks to ensure that clearly erroneous data do not enter the database. Recommendations are also given on data capture speed.

Yield calculations

The scope of this subsection has been changed from the old, more lactation-based approach towards 24-hour yield calculations and periodic yields of any chosen length. With the present technologies in developed dairy countries, calculating the 24-hour yields is increasingly complex, especially in robots but also with stationary parlour meters and one-milking recording. The exact calculation methods have been presented in an appendix.

This subsection also sets the standard for approving a new yield calculation method. Approval should always be sought from the ICAR Secretariat.

Reporting

This is a new subsection about reports, data files, statistics and calculated key figures. It strongly recommends preparing reports for the farmer after every recording, as well as having a clear policy on who has access to the data. In this subsection, we have also defined some key figures with alternative ways to calculate them. One example is the average yield of a herd, and since it can be calculated in many ways, it is important to distinguish between them.

Quality Control

This subsection suggests ways to evaluate data quality. The proposed tools are bulk tank comparison, supervised or repeated recording, and automatic evaluation of recording data. Examples are provided on how the results of these three can be used in practical milk recording.

Conclusion

The new guidelines have been designed to accommodate the new realities faced by dairy farms all over the world. Different levels of technology are catered for so that milk recording can be effectively carried out anywhere, from a small hand-milking herd through robotic milking units up to parlours where the flow of incoming cows almost never stops. The Dairy Cattle Milk Recording Working Group wishes to thank all parties for their collaboration and strongly recommends that the new Guidelines be studied and applied.