

Data quality points - an immediate and motivating supervision tool.

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Abstract

ProAgria has a development project on milk recording with the aim to have better data capture, data quality and use of data in order to give more value to farmers. Data quality points will be introduced as a part of the milk recording reform. They allow taking immediate action when necessary, while the present system is just looking back to the finished recording year. Data quality points are reported to the advisor and to the farmer after each recording. They take into account e.g. recording intervals, deviations from dairy deliveries, and milk meter testing. The test groups have received these new figures with enthusiasm. Officially data quality points will be introduced in the beginning of 2015.

Keywords: milk recording, unofficial, data quality, data quality points

Supervision of data quality in Finland

ProAgria is a Finnish agricultural advisory organisation providing services in milk recording. Currently ProAgria is running a development program on milk recording with aim to enhance the services and give more value to the farmers. The goal is to increase the number of cows in milk recording to 90% (3/2014: 84%). Improvement of data quality and utilisation of data on farms are the key tasks in the project.

Data quality depends on successful data capture. In Finland we have a tradition to collect more data for data quality assessment than in many other countries, e.g. the testing day of milk meters and the deviations from dairy data. Since 2003 the data quality on farm level has been assessed after the recording year has been finished. This system is only looking at the past and rather harsh to the farmers. Records are mainly declared unofficial because of deviations in test intervals (6%), fat deviation from dairy fat (6%), testing of milk meters (4%) or sampling intervals (3%). Unofficial records are unfit for publication.

Advisors are able to look at the possible deviations from milk recording rules from a status report during the recording year, but all of these figures are not reported back to the farmer. An advisor will contact the farm when e.g. fat deviation is getting too high and give advice about the right sampling technique. However, exceeded test or sampling interval will inevitably cause the whole recording year deemed unofficial. From the polls we have learned that the farmers are hoping for early interference when data quality becomes weaker.

New method - DQP

Data quality points (DQP) is a novel and motivating data quality supervision tool, which will be introduced 2015. The goal is to improve data quality, which is valuable for the farmer, for advisory services and for breeding. DQP is reported to the farmer and advisor after each recording, thus immediate actions can be taken.

The basic data quality points, a starting value, for each farm are 10. The worst possible DQP is -57, which means that no action has been taken in milk recording in past years. Recording year will be declared unofficial only when the farm average of the DQP's is below chosen limit (0).

The decrease in data quality points can be caused by following sources (an example in table 1): the recording and sampling interval, the number of recordings and samplings during past 12 months, the testing interval of milk meters, the amount of farm usage of milk (litres/cow/year), the deviation from dairy milk and fat (4 months average). If a technician is used for sampling, five points will be added.

Table 1. The effect of sampling interval days on DQP.

DQP points	Milk recording interval			
	2 wk	4 wk	6 wk	8 wk
0	<17	<35	<48	<65
-1	17-18	35-40	48-54	65-75
-2	19-20	41-46	55-60	76-90
-3	20-21	47-52	61-72	91-105
-4	22-25	53-59	73-84	106-120
-6	>25	>59	>84	>120

In table 2 is an example of data quality points on a farm. These points refer to the latest milk recording. This farm has three points, which is at acceptable level, but still some actions could be done to ensure the data quality. There seems to a problem with reporting of milk used on farm, which affects also the milk dairy deviation. In this case herd milk yield from milk recording is much bigger than the delivery to dairy. The farmer should also consider testing of milk meters.

Table 2. DQP from one recording on an example farm.

	DQP Points	
Recorder	0	B
Recording interval	0	28d
No of recordings	0	12
Sampling interval	0	64
No of samplings	0	6
Meter testing	-1	405d
Dairy deviation, milk	-5	108
Dairy deviation, fat	0	-0.13
Farm usage	-1	0
DQP total	3	

Response to DQP

The data quality points have been introduced to test groups of dairy farmers, advisors and co-operation partners. All groups have given positive feedback about the improvement. The current system has not encouraged monitoring the data quality on regular basis.

Farmers have received the data quality points with enthusiasm. They find it valuable that the data quality is reported frequently in a positive manner, which allows them to improve the quality during the milk recording year. We have presented data quality points to few groups of farmers so that they see the DQP's of the group without farm identities. It has always caused a great urge to understand why somebody does not have 10 points and how could they reach the maximum points, even if any points above zero would be fine. The scale is chosen because the Finnish school grading system is 4 – 10.

Advisors have also greeted the new system warmly. They can help the farmer better than before with the data quality and thus improve other advisory services based on milk recording data. The DQP contains the same factors than the current system, thus it is rather easy to grasp. In current system the advisors had to spend plenty of time each spring with investigation of suspected unofficial records. This has sometimes led to falsification of data and unpleasant phone calls with the farmers. The advisors feel that their actions related to data quality become more caring than punishment with the new system.

Introduction of DQP

The computing of data quality points will be a part of milk recording data processing by summer 2014. The points will be first reported to the advisors, so that they get used to the new tool. From January 2015 the points will be reported also to the farmers. Farmers will find their own DQP from web services and milk recording reports. They can also order a SMS service.

The DQP will change the focus from supervision to customer value and improvement of data capture. The new system will not decrease the number of unofficial recordings itself, but it will surely increase the number by actions to be taken. Our aim is that less than 10% of the farms would have unofficial recording year in year 2015.