MONITORING WELFARE IN PRACTICE ON DUTCH DAIRY FARMS

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Summary

The results of three welfare assessment protocols have been correlated with the Welfare Quality® assessment protocol on 60 dairy farms in the Netherlands. After adaptations to the WQ protocol, an alternative assessment protocol could be constructed of components of the other three. This had a correlation with the adapted WQ of 0.88. Execution of this new welfare monitor takes approximately 1.5 h for a farm with 100 dairy cows. This protocol is now being integrated in the Koekompas (=Cow Compass), a management assistance tool.

Introduction

An increase in welfare is correlated with a higher milk yield (Van Eerdenburg et al., 2013). The Welfare Quality welfare assessment protocol® (WQ) is quite intensive and it takes a long time (up to a day) to assess a farm. Several other protocols haven been designed and published that do not require a full day for a single farm and these have been compared with WQ.

Materials & methods

In this project 3 other welfare measuring protocols: Welzijnswijzer (=Welfare Indicator), Koekompas (=Cow Compass) and the Continue welzijns monitor (=Continuous Welfare Monitor), have been compared with WQ on 60 dairy farms in the Netherlands. Four veterinary practices made a list of their dairy farmer clients. Each was given a score from good to bad, based on the availability of good quality food & water, quality of housing, health and behaviour. Out of the lists, randomly, 60 farms were selected in such a way that in each practice there were 5 good-, 5 average- and 5 bad farms. The farms were visited within 2 weeks for all protocols in order to avoid changes in welfare status over time. The result of the WQ protocol was considered to be the reference and the other three were correlated with WQ (Pearson correlation in SPSS version 20.0). Not only at the level of the end score, but also at principle, criteria and indicator level.

Results & discussion

The results for WQ were: 3 farms with score Not Classified, 52 with score Acceptable and 5 Enhanced, no farm was scored Excellent. This implies that WQ does not have a proper discriminative capacity. Because of this, the correlations with the other protocols were very low and not statistically significant. In relation to the WQ endscore the Pearson correlation was calculated for the principle of Feeding 0.46; Housing 0.15; Health -0.07 and Behavior 0.47. Therefore, the original WQ was adapted in 3 ways: 1) Drinkers: If one of the drinkers is dirty, all drinkers are considered to be dirty. This is not logical because a farm with 10 drinkers will have a lower score than a comparable farm with 5 clean ones just because one of the drinkers is dirty. However, 9 clean drinkers are available for the cows. In the adapted protocol, therefore, a weighted score for cleanliness was introduced. A clean drinker scored 1, partially dirty 2 and dirty 3 points. After giving the score for the rest of the parameters measured, the total is divided by the average score for the cleanliness. 2) Integument alterations: If a cow has one hairless patch (HP) or lesion/swelling, she is taken in the calculations as a cow with a HP or a lesion/swelling, not taking into account how many HP or lesions/swellings she has. In the adapted protocol, therefore, the average number of HP, lesions and swellings per cow is used in the calculations. 3) Qualitative Behaviour Assessment (QBA): The QBA is seriously disputed (Bokkers et al., 2012) and, in the experience of the present study, very difficult to explain to the farmers. Since the aim of WQ is improvement of animal welfare, one has to motivate the farmer to improve the situation on his farm. With the use of the QBA, farmers are not convinced that the result is something to be taken seriously. Therefore, the QBA was omitted. A new score was calculated for the 60 farms: 22 farms scored Not Classified, 31 scored Acceptable and 7 Enhanced, no farms scored Excellent. The Pearson correlations of the 4 principles were: Feeding: 0.85; Housing: 0.45; Health: 0.99 and Behaviour: 0.99. Correlations with the WQ protocol and the other protocols were still very low. However, it was possible to construct a shorter protocol out of the components of the three other protocols tested

(table 1), with a correlation of 0.88. Furthermore, the number of animals that need to be assessed on an individual basis could be reduced substantially as well. Thus reducing the time required for the execution of the protocol substantially (table 2). Assessing welfare of a group of animals can be done with animal based measures and environmental measures. WQ uses mainly animal based measures, like behavior. These measures reflect better what the status of the cow is, but need a substantial amount of time to assess, whereas measuring the environment can be done relatively fast. For some parameters there was a high correlation between the animal based and environmental measures. For example, the number of collisions of the cow with the dividers (during the lying down movement) correlated well with the width of the freestall ($r^2 = 0{,}63$; p= 0,03). Measuring the width of the freestall takes just a few minutes, whereas to estimate the number of collisions in a reliable way one needs at least two hours watching cows that lie down. In the new welfare monitor, therefore, the number of collisions is replaced by the width of the freestalls.

Principle	Parameters measured
Feed & water	Body condition
	Water supply
Housing	Freestall dimensions
	Softness of bedding
	Cleanliness of the cows
	Access to pasture
	Cows lying outside freestall
Health	Locomotion score
	Skin lesions
	Mastitis
	Other diseases (respiratory/metabolic/fertility)
Behaviour	Avoidance distance at the feedrack
	Possibilities for expression of normal behaviour

Table 1. Parameters measured in the new welfare monitor

	75%	66%	50%
Lameness	5,5	6,8	9,9
Skin Lesions	5,2	6,1	9,3
Diseases	5,9	3,9	8,8
Health (principle)	4,9	4,5	7,9

Table 2: Average deviation in % of the original score for items in the WQ protocol when 75%, 66% or 50% of the animals was scored individually.

It is proposed to change the WQ protocol according to the 3 adaptations described above.The newly developed protocol can be used as a screening tool for welfare problems and to improve the management on a dairy farm.

References

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