

Economic, education, encouragement and enforcement influences within farm assurance schemes

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Abstract

Farm assurance schemes are voluntary certification schemes that aim to provide consumers and retailers with assurances on animal welfare, environment and food safety standards. Whilst current schemes have often been focused on resource-based standards there has been interest in schemes including more outcome-based assessments. In order to maximise the likely impact of including these outcome assessments it is important to consider the economic, education, encouragement and enforcement drivers that may improve welfare. Using dairy cattle lameness as an example, the potential mechanisms to use these drivers within farm assurance schemes is reviewed. Future development of schemes should focus on encouraging the active participation of farmers in monitoring and managing outcome measures. Economic and educational approaches have a role in supporting change. Where possible, economic drivers need to be working in the same direction as welfare (ie provide win-win situations). Educational initiatives, such as providing generic technical information and farm-specific advisory support, need to be available when requested. Finally, enforcement tools, based on existing non-compliance procedures, may be needed to stimulate activity if other initiatives prove ineffective on individual farms.

Keywords: animal welfare, economic, education, encouragement, enforcement, farm assurance

Introduction

Farm assurance has become an integral part of livestock production in the UK and many other countries (Rushen *et al* 2011). Animal welfare has been included alongside food safety and environmental concerns within the scope of all the assurance schemes the UK. Whilst membership of these certification schemes is voluntary, they are often unavoidable for producers wishing to market their products to the major retailers. The Farm Animal Welfare Council (2005) commented that assurance schemes have “a major role in ensuring acceptable standards of farm animal welfare”. However, it is less clear if assurance schemes have the potential to improve welfare. Schemes in the UK are normally accredited by the United Kingdom Accreditation Service to be compliant with the EU accreditation standard EN45011. This provides a certain level of credibility with respect to independence, impartiality and competence. It is, therefore, reasonable to assume that where specific resource requirements, such as increased space allowance or access to pasture, are included within the scheme then these will be provided to the animals. Furthermore, a recent study has demonstrated a higher compliance with legal requirements amongst assured compared to non-assured farms (KilBride *et al* 2011). Earlier work reported that dairy cattle on farms that were

members of the UK Freedom Food scheme operating to welfare standards defined by the RSPCA, scored better on some, but not all, welfare measures when compared with dairy cattle on farms outside the scheme (Main *et al* 2003).

In this article, we suggest that there are likely to be four broad categories of initiatives that may promote welfare improvement: economic, education, encouragement and enforcement. Economic drivers have long been recognised as important for farmer decision-making. There is some evidence that financial-incentive-based interventions may be effective in the dairy industry. For example, in Canada (and other countries) the penalties and incentives associated with cell counts measured in the milk have been associated with a considerable reduction in mastitis incidence (Dekkers *et al* 1996). However, there is also evidence that farmers do not always follow advice based on sound financial information. For example, sub-optimal economic behaviour towards mastitis management has been demonstrated in Dutch farmers (Huijps *et al* 2010). Education, similarly, has been seen as an important driver for improvement. Although interventions based solely on filling specific ‘knowledge deficits’ are unlikely to be effective especially if they do not take into account the context of the specific farm (Kristensen & Jakobsen 2011). Another important driver is to the value of encouragement-based

initiatives that take into account the farm's specific motivations. For example, Valeeva *et al* (2007) reported that:

internal esteem and taking pleasure in healthy animals on the farm were equally motivating as monetary factors

for preventing mastitis. Similarly, Vaarst and Sørensen (2009) advocated empowerment as an important principle when encouraging Danish farmers to reduce mortality in calves. Lastly, enforcement or 'involuntary decision' is another driver for behavioural change. For some issues, such as avoiding the transmission of infectious diseases, there is recognition within the farming community that some regulation is necessary to maintain minimum standards (Heffernan *et al* 2008).

However, before considering these external 'imposed' policies it is essential to recognise the concern for animal welfare that many livestock owners, managers and stockmen possess. For example, Leach *et al* (2010a) reported that "pride in a healthy herd" and "feeling sorry for lame cows" were more important motivators than concerns for the impact on profitability or on their assurance status. Recognising this animal-focused motivation is important for any welfare initiative. If an intervention programme is not sensitive to this concern then the initiative is likely to encounter significant resistance amongst the farming community. In a version of Plato's view that ethical change should be done by reminding and not teaching, Bernie Rollin (2011) suggested that we should use "Judo and not Sumo" to bring about change in animal welfare. In other words, we should not try to force others to believe as we do. Rollin comments that it is:

far better for me to show you that what I am trying to convince you of is already implicit — albeit unnoticed — in what you already believe.

Case example — dairy cattle lameness in the UK

Despite strong inherent concern for welfare there are still many farms where welfare standards could be improved significantly. This is well demonstrated by using dairy cattle lameness in the UK as a case example. Both the Farm Animal Welfare Council (2009) and National Farmers Union (NFU), (2010) have suggested that lameness in dairy cattle needs to be reduced. For example, Barker *et al* (2010) recently reported that the mean prevalence of lameness in over 200 farms was 36%. This article considers the existing influences on lameness prevalence and examines the role farm assurance schemes can have in promoting lower levels of lameness. It is suggested that economic, education, encouragement and enforcement drivers all play an important role in promoting lameness reduction.

Economic

Dairy cattle lameness is not only a welfare concern, it can also affect profitability. Green *et al* (2002) demonstrated that lameness was associated with a significant reduction in milk yield. An estimate of the cost of an initial case of lameness has been reported to be around £323 (Willshire & Bell 2009) and a study of Dutch dairy farmers suggested that foot disorders resulted in an average annual loss of US\$75 per cow (Bruijnjs *et al* 2010). So, although there

may be investment costs associated with improving lameness, reducing the incidence of lameness cases can be associated with productivity benefits. This is often recognised by farmers, however, Leach *et al* (2010b) found that farmers reported the affordability of the solutions as a less important barrier to lameness improvement than a lack of time and availability of labour. It is, therefore, reasonable to assume that the economic drivers are operating in a positive 'win-win' direction. However, further economic incentives may have a role in promoting welfare improvement.

Education

A common assumption is that education can also act as a driver for improved welfare where a lack of knowledge contributes to the problem. However, education initiatives have been shown to have varying degrees of effectiveness. Even though there is a substantial evidence base for the aetiology and pathogenesis of lameness in dairy cattle, the provision of farm-specific advice using this information has been shown to stimulate minimal husbandry changes (Bell *et al* 2009). It is likely that farmers will only utilise information if they are already motivated and willing to ask for advice. Leach *et al* (2010b) reported that farmers' own lack of knowledge was seen by them as a less important barrier to improvement than availability of time and labour.

Encouragement

Working positively with a farmer's concern for the welfare of animals in their care is likely to be a successful intervention approach (Whay & Main 2009). For example, participatory approaches, that promote positive engagement of the relevant community in all stages of the design and delivery of initiatives, have successfully been used to stimulate activity in health-care, especially in developing countries (International HIV/AIDS Alliance 2006). Social marketing and facilitation principles have been successfully used in the Healthy Feet Project (Whay *et al* 2012). These approaches were shown to stimulate farmers to undertake lameness-related activity. Social marketing requires organisations to work together to develop a co-ordinated approach to actively sell the benefits, whilst understanding the barriers, of behaviour change (McKenzie-Mohr & Smith 1999). Facilitation focuses the attention of advisors to promote farmer 'ownership' of the potential husbandry changes. This shift away from the traditional 'telling' approach of advisors requires a radical shift in attitude amongst advisors and veterinary surgeons (Atkinson 2010).

Enforcement

Requiring farmers to change behaviour has been the traditional approach for legislation. Similarly, insisting on change is also an inherent component of farm assurance methodology. Failure to comply with farm assurance can result in expulsion from the scheme. This can have very serious consequences as exclusion from a farm assurance scheme may mean that the farmers in question are less able to sell livestock products.

Table 1 An illustration of how enforcement standards may be applied to the problem of lameness in cattle.**Examples of UK standards relevant for dairy cattle lameness**

The following are examples from either UK legislation or from the UK welfare codes that are relevant for dairy cattle lameness. Although UK welfare codes are recommendations, farm assurance schemes often require adherence with them as well as UK legislation.

a) Requirements associated with health planning activities

- The stock-keeper should draw up a written health and welfare plan with the herd's veterinary surgeon and, where necessary, other technical advisors, which should be reviewed and updated each year.*
- The written health and welfare plan should... look at... lameness monitoring and foot care.*
- A record must be maintained of... any medicinal treatment given to animals.**
- ...you may find it useful, as part of the health and welfare plan, to note specific cases of... lameness... and where appropriate the relevant treatment given.*

b) Requirements associated with individual affected animals

- Any animals which appear to be ill or injured must be cared for appropriately and without delay, where they do not respond to such care, veterinary advice must be obtained as soon as possible.**
- If a lame animal does not respond to the veterinary surgeon's treatment, you should have it culled rather than leave it to suffer.*
- ...you must not transport any cattle off-farm that cannot stand up unaided or cannot bear their weight on all four legs when standing or walking.*

c) Requirements associated with herd/group level outcomes

- ...all keepers of animals must... ensure that the needs of an animal for which he is responsible are met to the extent required by good practice and those needs shall be taken to include... its need to be protected from pain, suffering, injury and disease.***¹

d) Requirements associated with provision of specific resources

- The floor should not slope too steeply.... as steeper slopes can cause leg problems, slipping and falling.*
- [For slatted accommodation] the gaps between the slats should not be wide enough to cause foot injuries.*
- [For cubicles] you need to have enough bedding to ...prevent them from getting contact or pressure sores.*

* DEFRA Welfare Code of Recommendation: Cattle 2003 PB7949.

** Welfare of Farmed Animals (England) Regulation 2007 SI 2078.

*** Animal Welfare Act (2006) Chapter 45.

¹ Whilst not currently explicit in this standard guidance notes for inspectors could state that prevalence of lameness above a certain % could be used as evidence of failure to provide this need.

All farm assurance schemes include non-specific requirements that can be related to lameness. For example, Table 1 shows the relevant legal and welfare code requirements for dairy cattle lameness that are incorporated into all assurance schemes in the UK.

Potential role of farm assurance schemes in reducing lameness

Since it is generally accepted that dairy cattle lameness is a significant welfare concern, it is necessary to consider how farm assurance schemes can promote a reduction in the prevalence of lameness. The potential role of welfare outcomes within farm assurance schemes has been reviewed previously (Main *et al* 2007) and the Farm Animal Welfare Council (2005) had suggested that farm assurance scheme owners:

should work towards refining their standards and inspection procedures to achieve an increasing inclusion of welfare outcomes.

An important development has been the recently completed project which has produced standardised

welfare assessment protocols for cattle, pigs and poultry (Welfare Quality® 2009). However, the next stage is to use welfare-outcomes' methodologies within assurance schemes to promote welfare improvement by taking into account the potential role of economic, education, encouragement and enforcement drivers.

As discussed, reducing lameness is often a 'win-win' situation with respect to welfare and profitability. Hence, farm assurance support (see below) for a reduction in lameness should be beneficial for the dairy industry. Farm assurance schemes could also introduce a financial reward or penalty system to reduce lameness, however, there are considerable practical difficulties associated with introducing an incentive system. Farm assurance schemes are, therefore, unlikely to be able to undertake full herd lameness evaluations on a sufficiently regular basis to be used for a financial incentive system.

Whilst education-based initiatives are valuable to increase the technical knowledge within the industry they are unlikely to be effective on their own, although they can be used to support other approaches. Farm assurance assessors

are restricted by the requirements of EN45011 from providing farm-specific tailored advice. However, they can promote interest in the value of potential husbandry changes, provide detailed non-farm specific advice and encourage farmers to seek advice from others (J Beaumont, UKAS, personal communication 2011).

Welfare outcomes have significant potential to help with an encouragement approach. For example, promoting positive discussion and engagement with farmers by discussing and involving farmers in mobility scoring may stimulate activity. It is likely that the format of such discussions will be absolutely vital. For example, the Healthy Feet Project changed its method of feeding results back to farmers from reporting an overall percentage of cows that were lame during an assessment to a list of cows that were “likely to benefit from treatment” (Whay *et al* 2012). This was perceived by many farmers to be a more constructive and less confrontational approach. Any inclusion of welfare outcomes into farm assurance schemes needs to identify the optimum mechanism for discussing results. The goal should be to ensure farmers are actively engaged in the process and include lameness monitoring and treatment as part of their management routines.

For those farmers that fail to respond to positive encouragement and education initiatives, an enforcement approach may be appropriate for dealing with poor performance within farm assurance schemes. For example, of the 54 Healthy Feet Project farms that received intensive support over a three-year period, and that had a lameness prevalence greater than 35% at the start of the study, four farms did not reduce lameness at all and a further eight reduced lameness by less than 10%. For these farms, the existing requirements (see Table 1) concerning the management of individual lame animals could be enforced more rigorously. Assessors undertaking an evaluation of farm assurance requirements could observe animals that are lame as defined by the DairyCo mobility score (2008) and then examine the treatment provided to these animals. The DairyCo mobility score also includes guidance on how cows should be managed. The guidance suggests that cows with impaired mobility (score 2) are ‘lame and likely to benefit from treatment’ and suggests that the ‘foot should be lifted to establish the cause of lameness’ and that it ‘should be attended to as soon as practically possible’. The suggested actions for cows with severely impaired mobility (score 3 cows) includes the following: “Cow requires urgent attention, nursing and further professional advice. Cow should not be made to walk far and kept on a straw yard or at grass. In the most severe cases, culling may be the only possible solution”.

Animal welfare implications and conclusion

Farm assurance schemes have the potential to improve animal welfare for an increasingly large number of animals as new certification schemes aiming to provide assurance on welfare are developed in many parts of the world. Incorporation of welfare outcomes into the assessment, in particular, has the potential to promote improvements in

areas such as dairy cattle lameness; although its impact will depend upon the use of economic, education, encouragement and enforcement drivers that may motivate and support farmers. In particular, it is argued that schemes should focus on encouraging the active participation of farmers in monitoring and managing outcome measures. Where possible, economic drivers need to be working in the same direction as welfare (ie provide win-win situations). However, since farmers do not always act as profit-maximisers, relying upon the economic drivers can be inadequate to stimulate improvement. Similarly, providing educational resources alone is not likely to stimulate change. Generic technical information and farm-specific advisory support are more likely to be used if the farmer recognises a problem. Where encouragement, economic and education approaches do not stimulate action then enforcement tools, based on existing farm assurance non-compliance procedures, would be justified on individual farms which have persistently high levels of welfare concern.

AssureWel, a five-year collaborative project between the University of Bristol, the Soil Association and the RSPCA, and involving the other farm assurance schemes, is currently developing the methodology for including welfare outcomes within assurance schemes. As part of that project, potential approaches are being developed currently that utilise existing knowledge and experience in animal welfare improvement initiatives in order to maximise the likely impact of the introduction of welfare outcomes into the inspection procedures of assurance schemes.

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