



SID 5 Research Project Final Report

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Project identification

1. Defra Project code	<input type="text" value="OF0343"/>
2. Project title	<input type="text" value="Welfare benchmarking and herd health plans on organic dairy farms"/>
3. Contractor organisation(s)	<input type="text" value="Duchy College Organic Studies Centre
Rosewarne
Camborne
Cornwall
TR14 0AB"/>
4. Total Defra project costs	<input type="text" value="£ 13,679"/>
5. Project: start date	<input type="text" value="01 February 2004"/>
end date	<input type="text" value="31 March 2005"/>

6. It is Defra's intention to publish this form.
Please confirm your agreement to do so..... YES NO

(a) When preparing SID 5s contractors should bear in mind that Defra intends that they be made public. They should be written in a clear and concise manner and represent a full account of the research project which someone not closely associated with the project can follow.

Defra recognises that in a small minority of cases there may be information, such as intellectual property or commercially confidential data, used in or generated by the research project, which should not be disclosed. In these cases, such information should be detailed in a separate annex (not to be published) so that the SID 5 can be placed in the public domain. Where it is impossible to complete the Final Report without including references to any sensitive or confidential data, the information should be included and section (b) completed. NB: only in exceptional circumstances will Defra expect contractors to give a "No" answer.

In all cases, reasons for withholding information must be fully in line with exemptions under the Environmental Information Regulations or the Freedom of Information Act 2000.

(b) If you have answered NO, please explain why the Final report should not be released into public domain

Executive Summary

7. The executive summary must not exceed 2 sides in total of A4 and should be understandable to the intelligent non-scientist. It should cover the main objectives, methods and findings of the research, together with any other significant events and options for new work.

Introduction

In response to the recommendations of recent studies on the health and welfare of dairy cattle (Whay *et al.* 2003) and to assist farmers to meet legislative requirements, promoting farm animal welfare and meeting consumer demand, this study investigated, by means of farmer interviews, the effectiveness of herd health and welfare assessment and benchmarking as a farm management tool. The aims of the study were to

- offer support to the organic farming sector and provide detail relevant to all dairy farms utilising herd health plans;
- provide information to both organic dairy farmers and their veterinary advisors on the most important elements of herd health plans and the benefits of their effective implementation; and
- identify the benefits and constraints to the use and adoption of comparative animal health and welfare assessment as a herd health management tool.

From this information, recommendations for practical application and future research would be developed. Other DEFRA funded projects would benefit from findings relevant to their objectives, the development of herd health planning and improvement of farm animal welfare.

Objectives

As part of a larger study with an objective to carry out health and welfare assessment and benchmarking on organic dairy farms in order to assist farmers and their advisors to identify strengths and weaknesses in herd health and welfare performance, the objectives of this study were to

- use qualitative research interviews to
 - a. evaluate farmer responses to the welfare assessment and benchmarking,
 - b. assess the impact and evaluate the effectiveness of the intervention in delivering animal health and welfare improvements and
 - c. as a tool to develop herd health plans for organic systems;
- ensure that the results are effectively disseminated to farmers, veterinarians and advisors.

Background

Benchmarking of production performance has been actively used by many farmers to compare their achievements with those of others and to target areas for improvement with the aim of increasing financial returns from dairy, beef, sheep and other farm enterprises. A protocol to apply this benchmarking concept to farm animal health and welfare has been developed using animal based observations. By observing the animals it becomes possible to compare production systems with different resource provisions, such as quality of flooring, amount of trough space and stocking density, and management approaches. This approach facilitates the identification of strengths and weaknesses in the different management systems assessed and through comparison with others, can demonstrate what it is possible to achieve and where improvements might be made.

Qualitative research interviews enable the researcher to gather insights on the interviewee's perception and opinion. They allow the beliefs and concerns of interviewees to be explored and enable the consistency and weight of the story told to be evaluated. This technique has been used in a range of subject areas including in a farm animal welfare context. However this method for collection of information provides a descriptive account based upon the observations and interpretation of the interview material by the researcher, rather than attempting to quantify opinion or experience. It cannot be used to provide statistically valid numerical data.

Summary of assessment and benchmarking process

a) *Phase 1* During winter 2002 to 2003, 15 organic dairy farms in SW England took part in a herd health and welfare assessment and benchmarking project. The response to the benchmarking process was evaluated by qualitative research interviews. Farmers had implemented changes and requested that there should be a repeat assessment to identify any effect of the changes on cow welfare on their farms.

b) *Phase 2* In response to this farmer request, fourteen of the fifteen organic dairy farms which had participated in Phase 1 were recruited to Phase 2 of a herd health and welfare assessment and benchmarking study in September 2003. The sample size was increased by the recruitment of a further fourteen new farms following the award of additional funding for the study. On-farm health and welfare assessment and benchmarking of the 28 organic dairy herds was carried out during winter housing period 2003 to 2004.

Methodology

Semi-structured qualitative research interviews were used to obtain farmer feedback on their participation in comparative assessment of herd health and welfare. Interviews were conducted with all participating farmers between August and November 2004, on a one to one basis on farm either in the house or in the farm office, by the same interviewer. The interviews were recorded onto mini-discs then transcribed in full. Data were analysed using a 'Grounded Theory' approach in which common themes across interviews were identified.

Results

The average length of the research interviews was one hour and fifteen minutes (range thirty minutes to two hours and thirty minutes). Five common and inter-related themes were identified from the farmer interviews:

1. Sensitivities and misgivings

Some participants admitted to experiencing feelings of exposure and vulnerability as a result of allowing such a process to be carried out on their herds. Others experienced feelings of shock, failure and disappointment as a result of the assessment outcome. There was considerable concern about the potential for mis-interpretation and mis-use of the results by others outside farming and research circles, particularly if taken out of context and without clear explanation and understanding of the assessment process. Some expressed concerns that the findings from the assessment and benchmarking might be used in the development of new legislation or that the process might become a requirement of farm quality assurance schemes.

2. Acceptability of scoring methodology and indicators assessed

On the whole, the measures used for the assessment were considered to be relevant to herd health and welfare. Farmers were critical of the way in which scores were applied and questioned the relevance, at low/mild levels, of indicators assessed to animal health and welfare. This was particularly true of some scores for mild degrees of dirtiness, lameness and injuries from the environment where the assessment was considered to have been marked '*severely*', '*overly critically*' or '*harshly*'. Some were particularly distressed that their efforts to keep their animals clean had apparently failed and were at a loss as to what steps could be taken to improve the situation further. Whilst farmers acknowledged that lameness was a major herd health problem, their initial reactions were of shock and disbelief at the percentage of their cows that were classified as lame on the day of the assessment. Some were of the opinion that if detection of very mild lameness was so difficult, the measure at such a mild level was impractical and had no relevance to day to day management of herd health and welfare. Others considered that where detection and investigation of very mild cases of lameness was possible, it might have some value as a management tool in preventing more serious problems from developing. Injury to hocks, ranging in severity from slight rubbing of the hair to swelling and ulceration was a main focus of farmers' attention. Although scores given were again at three levels of severity, interestingly there was greater acceptance of the significance of mild levels of incidence of hock injury. Furthermore, the links between hock damage, aspects of the housing environment and lameness were clearly recognised. It was suggested that the assessment should include all dairy animals, from calves, rearing and in calf heifers, dry and milking cows, to bulls. Respondents also considered that the addition of medicine use, fertility and calving indices and mastitis management to the assessment and benchmarking would add value to the process.

3. Raised awareness and motivation to improve

Farmers commented that participation in the assessment, had raised their awareness about their animals' health and welfare and of factors that might affect animal health and welfare within their individual farming systems. Most participants had been keen to affect improvements and had changed at least one element of their system with the aim of better health and welfare for the herd. The main foci for change were the causes of lameness, dirtiness, injuries from the environment mainly involving damage to hocks and necks and condition scoring. There was strong agreement amongst participants that the health and welfare of the cows and financial considerations were the main drivers for change on the farm. Most were of the opinion that the two were inextricably linked in that the health and welfare status of the cows would directly affect performance and therefore financial returns. Constraints to improving animal welfare on farm were largely related to housing issues and lack of finance to implement change in both old cubicle housing and in new and refurbished systems, representing considerable and often recent investment.

4. Veterinary support and herd health planning

It was clear that some participants had a very good working relationship with their veterinary advisors. A number of these farms had actively sought out a new veterinary advisor in order to improve the quality of veterinary support for their organic system. Others reported that they were dissatisfied with the service they had received from their veterinary practices and had become reluctant to involve their veterinarians in routine aspects of herd health and welfare management. The degree to which Herd Health Plans had been developed as a useful management tool was clearly linked to the level of interest and quality of veterinary support available to the farmer.

5. Value of assessment and benchmarking

With regard to benchmarking, the main focus of attention was on the identification of particular strengths and weaknesses and how improvements to weaker elements might be affected within individual farming systems. Keen to improve their own situation year on year, farmers were interested to learn if management or structural changes they had introduced translated into improvements to herd health and welfare and lead to improved performance within the benchmarking league table. Nevertheless, a number of participants suggested that breed, calving pattern, herd size, housing and other system differences made benchmarking between farms less useful than it might at first appear. Instead they considered that year on year within farm comparison was the more useful measure to determine where progress had been made. Implicit in these comments was the desire to participate in further on-farm health and welfare assessment and to continue the process of improvement into the future. Although farmers suggested a range of timescales from six months to five years, within which repeat assessments should occur, most considered that the interval should be greater than one year. Most considered that the ideal assessor would be a veterinarian with a farm and cattle background. Others thought that whilst a veterinary qualification was probably not essential, the assessor should have a clear understanding of farm animal health and welfare. Farmers voiced concerns over inter-observer reliability. Of utmost concern was that continuity and the validity of any comparison between farms and between years might be lost if more than one person carried out the assessments for a particular group of farms.

Recommendations

1. *It is recommended that the provision of clear explanation and support is built into all future development and implementation of on-farm welfare assessments to ensure that individuals and groups of farmers fully understand the process in which they participate.*

2. It is recommended that

- a system of acceptable tolerance levels of welfare indicators is developed in conjunction with a scoring system that applies positive scores to the assessment procedure which takes into account the difficulties of practical application on farm and establishes realistic and achievable goals in welfare improvement.
- assessment protocols should only include indicators proven by sound scientific evidence to be appropriate to the goal of improved farm animal health and welfare.

3. There is a requirement for the development of an assessment protocol for calves in order that a complete picture of dairy herd health and welfare can be produced.

4. It is recommended that the need for investigation and clarification of which changes are likely to improve animal welfare and the timescale within which improvements can be expected to occur within farming systems is addressed before widespread implementation of farm animal health and welfare assessment is introduced.

5. It is strongly recommended that an animal welfare payment scheme is introduced to

- assist in making improvements in animal welfare
- act as an incentive and reward the achievement of improved welfare status, whilst at the same time,
- ease the financial burden for farmers.

This should be linked to the updating and redevelopment of farm buildings where such action is justified on animal health and welfare grounds.

6. To address this shortfall veterinary training should be expanded to include organic farming principles, preventative and reduced medicine use and homeopathy.

7. It is recommended that in order that such problematic issues are identified, the formation of assessment groups of farms should be supported and encouraged. It is further recommended that areas where difficulties in affecting welfare improvement are experienced should be targeted for further research.

8. A system of training and accreditation of assessors that includes regular monitoring of performance and updating of skills should be developed as an integral part of farm animal health and welfare assessment.

9. A system of training and accreditation of assessors that includes regular monitoring of performance and updating of skills should be developed as an integral part of farm animal health and welfare assessment. It is recommended that the evaluation of the consistency and reliability of welfare assessment over time, and the impacts of potential errors on farming businesses should be made the focus of future research.

10. What is now required is to develop simpler yet robust approaches that enable farmer perception and opinion to be included as key elements in future herd health and welfare endeavours. Clarity of purpose would appear to be an imperative. A starting point may be to examine the approach taken by other disciplines, such as human medicine and environmental management.

Project Report to Defra

8. As a guide this report should be no longer than 20 sides of A4. This report is to provide Defra with details of the outputs of the research project for internal purposes; to meet the terms of the contract; and to allow Defra to publish details of the outputs to meet Environmental Information Regulation or Freedom of Information obligations. This short report to Defra does not preclude contractors from also seeking to publish a full, formal scientific report/paper in an appropriate scientific or other journal/publication. Indeed, Defra actively encourages such publications as part of the contract terms. The report to Defra should include:

- the scientific objectives as set out in the contract;
- the extent to which the objectives set out in the contract have been met;
- details of methods used and the results obtained, including statistical analysis (if appropriate);
- a discussion of the results and their reliability;
- the main implications of the findings;
- possible future work; and
- any action resulting from the research (e.g. IP, Knowledge Transfer).

1 Introduction

In response to the recommendations of recent studies on the health and welfare of dairy cattle (Whay *et al.* 2003) and to assist farmers to meet legislative requirements, promoting farm animal welfare and meeting consumer demand, this study investigated, by means of farmer interviews, the effectiveness of herd health and welfare assessment and benchmarking as a farm management tool. The aims of the study were to

- offer support to the organic farming sector and provide detail relevant to all dairy farms utilising herd health plans;
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- identify the benefits and constraints to the use and adoption of comparative animal health and welfare assessment as a herd health management tool.

From this information, recommendations for practical application and future research would be developed.

Other DEFRA funded projects would benefit from findings relevant to their objectives, the development of herd health planning and improvement of farm animal welfare.

1.1 Scientific Objectives

As part of a larger study with an objective to carry out health and welfare assessment and benchmarking on organic dairy farms in order to assist farmers and their advisors to identify strengths and weaknesses in herd health and welfare performance, the objectives of this study were to

- use qualitative research interviews to
 - a. evaluate farmer responses to the welfare assessment and benchmarking,
 - b. assess the impact and evaluate the effectiveness of the intervention in delivering animal health and welfare improvements and
 - c. as a tool to develop herd health plans for organic systems;
- ensure that the results are effectively disseminated to farmers, veterinarians and advisors.

1.2 Milestones and Achievement of Objectives

During Phase 2 of an earlier study, 28 farms including 14 of the 15 who took part in Phase 1 and 14 new farms participated in on-farm herd health and welfare assessment and benchmarking during winter 2003 - 2004. The total number of qualitative interviews conducted was therefore reduced from the 30 originally planned to the 28 participants in the earlier study.

1.3 Background

Benchmarking of production performance has been actively used by many farmers to compare their achievements with those of others and to target areas for improvement with the aim of increasing financial returns from dairy, beef, sheep and other farm enterprises. A protocol to apply this benchmarking concept to farm animal health and welfare has been developed using animal based observations (Whay *et al.* 2003). By observing the animals it becomes possible to compare production systems with different resource provisions, such as quality of flooring, amount of trough space and stocking density, and management approaches. This approach facilitates the identification of strengths and weaknesses in the different management systems assessed and through comparison with others, can demonstrate what it is possible to achieve and where improvements might be made. The information gained is also useful to farmers and their veterinarians in the development of farm specific and effective herd health and welfare plans. Farmer acceptance of this form of assessment and benchmarking is key to its acceptance as a management tool. Furthermore, the acquisition of feedback from the assessment process is essential for understanding the impact and outcomes of the assessment and benchmarking as well as highlighting ways in which the process might be improved for future use.

Qualitative research interviews enable the researcher to gather insights on the interviewee's perception and opinion and allow the exploration of ideas and associated motivations. By exploring the 'lived world' of the interviewee in this way it is possible to obtain descriptions of specific situations and action sequences they have experienced (Kvale 1996). They allow the interviewer to explore the beliefs and concerns of their subject, to enquire about their ideas and opinions and to critically evaluate the consistency and weight of the story told. This technique has been used in a range of subject areas including in a farm animal welfare context (Vaarst *et al.* 2002; Miele and Evans 2005). This method for collection of information provides a descriptive account based upon the observations and interpretation of the interview material by the researcher, rather than attempting to quantify opinion or experience (Strauss and Corbin 1997). It cannot be used to provide statistically valid numerical data.

1.3.1 Summary of the assessment and benchmarking process

a) Phase 1 (funded by the Organic Milk Suppliers Co-operative Ltd., Mole Valley Farmers Ltd. and the Organic Studies Centre through Objective One (EAGGF and DEFRA)).

During winter 2002 to 2003, 15 organic dairy farms in SW England took part in a herd health and welfare assessment and benchmarking project (Huxley *et al* 2003, 2004) using an established protocol (Whay *et al* 2003). The results of the study allowed farmers to compare their performance with that of other participants in the study. In April 2003, participants and their veterinary advisors were invited to attend a workshop to discuss the benefits and utilisation of the benchmarking results. The response to the benchmarking process was evaluated by qualitative research interviews. Farmers had implemented changes and requested that there should be a repeat assessment in order that any effect of the changes on cow welfare on their farms could be identified.

b) Phase 2 (funded by the Organic Milk Suppliers Co-operative Ltd., Mole Valley Farmers Ltd., Milk Link, the British Cattle Veterinary Association and the Organic Studies Centre through Objective One (EAGGF and DEFRA)).

In response to this farmer request, fourteen of the fifteen organic dairy farms which had participated in Phase 1 were recruited to Phase 2 of a herd health and welfare assessment and benchmarking study in September 2003. The opportunity to increase the sample size by the recruitment of a further fourteen new farms was taken

following the award of additional funding for the study. On-farm health and welfare assessment and benchmarking of the 28 organic dairy herds was carried out during winter housing period 2003 to 2004 (Huxley 2005). Information was also collected on health planning and herd health plans, health records and medicine use. Immediate feedback was provided to participating farmers in the form of a welfare outcomes report. Improvements in welfare brought about by changes made to systems as a result of assessments and benchmarking results from Phase 1 of the study were identified by year on year comparison of results. In April 2004, farmers and their veterinary advisors attended a workshop held to assist them in understanding the strengths and weaknesses in health and welfare performance highlighted by the results and how these might usefully be employed to develop effective herd health plans.

2. Methodology

2.1 Qualitative research interviews

Semi-structured qualitative research interviews were used to obtain farmer feedback on their participation in comparative assessment of herd health and welfare. An interview guide was developed, based on five thematic questions and including a check list of topics to be covered within each theme (Appendix 1). Open questioning was used to encourage subjects to speak freely about their thoughts, experiences and reactions to participation in the assessment and benchmarking process. As far as possible, the subject was allowed to direct the course of the interview. The interviewer continually explored and evaluated the information and where appropriate sought elaboration of points and comments offered whilst maintaining the focus of discussion on the subject matter of the particular theme.

Interviews were conducted with all participating farmers between August and November 2004. A period of time was allowed to elapse between the presentation of results at the workshop and the interviews to allow farmers time to digest the information, to form views on whether action was required or not and if so how and when to implement changes to their farming system to improve welfare of their herd. All interviews were conducted on a one to one basis on farm either in the house or in the farm office, by the same interviewer.

2.2 Interview analysis

The interviews were recorded onto mini-discs then transcribed in full to include interviewer questions and the subjects' responses together with all other interjections and comments made during the interview time. The transcription data were stored and manipulated using NVivo software for qualitative data analysis (QSR International Pty Ltd, Australia). Data were analysed using a 'Grounded Theory' approach (Strauss and Corbin 1997; Vaarst *et. al.* 2002, 2003) in which sections of text containing a particular exchange of ideas or thought sequence were selected and assigned headings which summarised the content. From the resultant list of headings common themes across interviews were identified and the main issues determined by further evaluation of the selected sections of text within each of these themes.

3. Results

The average length of the research interviews was one hour and fifteen minutes (range thirty minutes to two hours and thirty minutes).

3.1 Themes across interviews

Five common and inter-related themes were identified from the farmer interviews and assigned the following headings:

6. Sensitivities and misgivings;
7. Acceptability of scoring methodology and indicators assessed;
8. Raised awareness and motivation to improve;
9. Veterinary support and herd health planning;
10. Value of assessment and benchmarking.

3.2. Sensitivities and misgivings

3.2.1 Initial comment

Farmers were very pleased to participate in the study as they found the concept of herd health and welfare assessment and benchmarking interesting. Their expectation was that they would learn and benefit from the experience. Of particular importance to the participating farmers was that they had felt under no pressure either to take part in the assessment, to agree with the findings or take any action based upon the results. Of great importance was the fact that the assessor 'came on farm with no other agenda' or with 'no axe to grind'. Farmers were impressed with both the attitude and approach of the veterinary researcher who carried out the work and with the detail of the assessment which they considered to be very comprehensive. The opportunity to obtain an independent and impartial opinion about their cows from a veterinary expert was valued highly.

3.2.2 Exposure and vulnerability

Some participants admitted to experiencing feelings of exposure and vulnerability as a result of allowing such a process to be carried out on their herds. Others experienced feelings of shock, failure and disappointment as a result of the assessment outcome (Box 3.1).

Box 3.1 Feelings expressed by farmers participating in herd assessment

'it's a shock having someone go through your cows, you open yourself up for that, makes you feel vulnerable'

'you feel exposed, having outsider look at your system'

'I was expecting to be at least average but felt not on top of job'

'it made me really seem like as if I wasn't a very good farmer'

Most of the latter was due in part to an initial lack of understanding on the farmers' part of the scoring methodology employed. This was largely in relation to either the number of cows judged to be lame or to have dirty hind limbs, udders or flanks at any level of severity on the day of the assessment.

3.2.3 Misinterpretation of results

There was considerable concern about the potential for mis-interpretation and mis-use of the results by others outside farming and research circles, particularly if taken out of context and without clear explanation and understanding of the assessment process. Respondents were worried that wider dissemination of the results might lead to bad publicity that would be damaging to farming generally and organic farming in particular (Box 3.2). These fears were all related to the assessment and benchmarking results for lameness, the definition of lameness in mild cases and the strict scoring method employed.

Box 3.2 Farmer concerns about mis-interpretation and mis-use of results

'if that information got out in to the press or something it would look terrible'

'I think they'd be horrified by it myself because they wouldn't look at in depth'

'you'd have to be careful how it was presented, if you actually just said 50% of all organic animals are lame'

'if these reports are taken in the wrong context they could have seriously bad implications on organic farming'

On a more positive note, farmers were also of the opinion that the very fact that they had been willing to take part in the assessment demonstrated that they took animal welfare seriously and were keen to make improvements. They suggested that this could be used to promote organic farming to the consumer.

3.2.4 Legislation

Some expressed concerns that that the findings from the assessment and benchmarking might be used in the development of new legislation or that the process might become a requirement of farm quality assurance schemes. They preferred that the process was used as an incentive to provide motivation and encourage the development of improved health and welfare rather than to attempt to force the situation through the imposition of yet more regulation and inspection. The concern was that the assessment process might become '*a stick to beat us rather than a carrot to lead us forward*'.

3.3 Acceptability of scoring methodology and indicators assessed

Most individuals were given the opportunity to discuss the preliminary results with the veterinary researcher immediately following the on-farm assessment. Each participant and their veterinary advisor received a full report that included individual and group results which enabled farmers to identify where the strengths and weaknesses of their systems lay. The format of the report and the colour coding system used for the benchmarking results were judged to be very clear and easy to follow (Appendix 2). At the farmer workshop, more detailed explanation of the full assessment and benchmarking results together with an explanation of the scoring methodology, using photographs and video clips, was provided by representatives from the University of Bristol. Following farmer feedback after Phase 1 of the earlier study, each measure assessed was scored on three levels according to the degree of severity ie mild, moderate or severe. This scoring method was well received and was considered to improve farmers' understanding of scores for certain criteria assessed. Similarly, the inclusion of photographic examples of each level of severity of indicators assessed was judged to add to the clarity of the scoring process.

Although this helped farmers to have a clearer understanding of the extent and degree of the problem in their herd, they remained critical of the way in which scores were applied. Furthermore they questioned the relevance, at low/mild levels, of the indicators to animal health and welfare. This was particularly true of some scores for mild degrees of dirtiness, lameness and injuries from the environment where the assessment was considered to have been marked '*severely*', '*overly critically*' or '*harshly*'.

3.3.1 Cleanliness

Some respondents argued that cows in a natural state would rarely if ever be completely clean and that this should be reflected in the scoring methodology. They were unhappy that if an animal had not been 100% clean, and had the slightest amount of dirt on the body or legs it had been classed as dirty, even though this was often at the mild level of severity. Others expressed disappointment and concern that their cows, which they had considered to be clean, were judged to be dirty. Some were particularly distressed that their efforts to keep their animals clean had apparently failed and were at a loss as to what steps could be taken to improve the situation further (Box 3.3). There were fears that this could lead to mis-interpretation of the results in the absence of clear understanding of the scoring method employed.

Box 3.3 Farmer comments on the results of the cow cleanliness assessment measure

'I would've thought that our cows are probably as clean as you would generally find, yet they seem to be highlighted as semi dirty which is extremely concerning'

'we didn't agree with the scoring on how clean our cows were, because we go to quite big measures to keep our cows clean. We clip the cows out, to keep them clean,'

'we didn't agree too much with the dirty cows, especially when we looked at his (the assessor's) diagram and the report on what was a dirty cow, and we thought well we haven't got a cow in the herd like that'

'I was quite surprised on how he graded them on how dirty they were, that is. I thought that was severe to be quite honest because some of them didn't seem to have any anything'

3.3.2 Lameness

This was perhaps the most controversial measure in the assessment. Whilst farmers acknowledged that lameness was a major herd health problem, their initial reactions were of shock and disbelief at the percentage of their cows that were classified as lame on the day of the assessment. Although they understood that if an animal was judged to be not completely sound at time of assessment it followed that it must be classified as unsound, they disagreed with what actually constituted lameness at a mild level of severity. It was argued that some cows were not lame but merely walked differently, particularly in the case of older animals, that others may have appeared to be favouring a foot due to an uneven surface or stone underfoot and that as the assessment was a snapshot of the situation on a single day, many of the very mild cases would have recovered and would not be evident a short time later. Farmers expressed relief if the majority of the lame cows in their herd were classified as mild cases and admitted that they were unable to identify lameness at very mild levels of severity (Box 3.4). Nevertheless they had given considerable thought as to what the underlying cause of the lameness might be.

Some were of the opinion that if detection of very mild lameness was so difficult, the measure at such a mild level was impractical and had no relevance to day to day management of herd health and welfare. Others considered that where detection and investigation of very mild cases of lameness was possible, it might have some value as a management tool in preventing more serious problems from developing.

Box 3.4 Comments about lameness scores at a mild level of severity

'I can hardly pick out that there is anything wrong with them'

'everyone thought he (the researcher/assessor) was very critical on the lameness side, he could see lameness where a farmer couldn't'

'he said she was favouring a foot, but none of us could work out which foot she was favouring'

'he could see lameness where a farmer couldn't, but he's a scientist and vet and he's trained to look for a perfect walking model'

However, many of those who had discussed the levels of lameness reported in their assessment results with their veterinary advisor had been given assurance that there was little cause for concern. In contrast, one veterinarian had accompanied the researcher to watch whilst his client's cows were assessed for lameness as they walked out from the milking parlour. Interestingly, although he admitted to having been surprised at the amount of lameness detected, he had eventually been able to agree with the researcher's assessment. This resulted in his appreciation of the value of close observation of individual cow locomotion and his suggestion that cows should be monitored in this way as a routine measure.

3.3.3 Injuries from the environment

Within this measure hock injury and neck hair loss scores gave rise to the most comment. Injury to hocks, ranging in severity from slight rubbing of the hair to swelling and ulceration was the main focus of farmers' attention. Although scores given were again at three levels of severity, interestingly there was greater acceptance of the

significance of mild levels of incidence of hock injury. Furthermore, the links between hock damage, aspects of the housing environment and lameness were clearly recognised (Box 3.5) and gave rise to considerable debate with the assessor about the effects of housing design, cubicle surfaces and bedding combinations on the incidence of these injuries. Whilst some considered that they had very little hock damage as a result of high straw use, for others this was a continuing problem that had proved difficult to resolve and on occasion had resulted in culling of the most severely affected cows.

Box 3.5 Farmer comments about the link between hock damage and lameness

'the biggest thing to me is hock damage, well not hock damage, but hock rubbing on things'

'they swelled up and we had to send them on as casualties because of their swollen hocks'

'you can see at the end of the end of the winter that that (hock damage) has had an effect on locomotion'

'we had had a problem with lameness, well it wasn't lameness, it was hocks'

Hair loss and calluses on the neck caused by rubbing on feed barriers when stretching through to reach forage were considered by some to be of little relevance to welfare as they were not affecting the animal. Others admitted that they had not really thought of them as injuries at all until they were highlighted as such in the assessment. In the latter case many had endeavoured to find a solution to the problem.

In respect of high scores for rising restrictions ie cows showing serious difficulty, hitting fittings or 'dog sitting' when rising from lying down to a standing position, the large size of the cows, aspects of housing condition and design features were identified as the main causes.

3.3.4 Relevance of measures to herd health and welfare

On the whole, the measures used for the assessment were considered to be relevant to herd health and welfare. However the measures of cows idling, flight distance and dull, thick and hairy coat in particular, were singled out for comment.

a) Cows idling

The relevance to health and welfare of cows idling, defined by the veterinary researcher as '*doing nothing at all*', was questioned as farmers did not view this lack of activity negatively and suggested that when cows were in this state they were perhaps just resting. As no satisfactory explanation for this behaviour could be given, farmers judged that the measure had no relevance to health and welfare and so should not be included in welfare assessment.

b) Flight distance

The relevance of flight distance to health and welfare was also queried. Farmers who received poor scores for this measure argued that their cows were normally very quiet, but would quite naturally be nervous of a stranger carrying a clip board and moving amongst them in the yard and housing. They considered that this would be particularly true of smaller herds where cows were always managed by the same person, whereas cows in larger herds managed by more people might well be less wary of strangers. As a result, they thought that the findings could be misleading and give a distorted view of the quality of stock-man-ship and animal welfare on the farms in question.

c) Dull, thick and hairy coat

On many organic farms in the south west of England cows are housed for only a limited period of time and/or given access to day time grazing during the winter months. In situations such as this, the relevance of thick and hairy coats as an indicator of poor health and welfare was questioned. Whilst the presence of a dull coat, hairy or not, was acknowledged as an indicator of poor health, farmers argued that a thick, hairy coat could be considered essential for good health and welfare of largely out-wintered animals. Nevertheless, these farms received negative scores for this indicator, raising concerns yet again about giving a false indication of poor conditions of health and welfare of the animals concerned.

3.3.5 Suggested measures

a) Whole herd assessment

The assessment focused on the milking cows in the dairy herd and did not include any dry cows, in calf heifers or young stock. This resulted in wide variation in the proportion of the overall herd assessed, according to the calving pattern, with some having less than 50% and others over 90% of cows in milk on the day of assessment. Most participants considered that as the dry cows were an important part of the milking herd and their health and welfare during the dry period would affect their condition and performance when milking, they should have been included in the assessment and benchmarking exercise. It was also suggested that, given some adaptation to the

assessment methodology and criteria used, this could be extrapolated to include all dairy animals, from calves, rearing and in calf heifers, dry and milking cows, to bulls.

b) Medicine use

Linked to this requirement for a whole herd picture, was a desire to learn about medicine use on organic farms. It was suggested that benchmarking of drug use, veterinary costs and reasons for culling over a twelve month period would provide valuable information and comparison across farms.

c) Fertility

Others were interested in focusing on body condition scores and gaining a clearer understanding of the relevance of condition score results to fertility, calving indices and other performance parameters.

d) Mastitis

There was disappointment that whilst information on the incidence of mastitis had been collected, the assessment had not yielded any detail about management of mastitis on different farms. Respondents felt there was much to learn from sharing information with others in this respect and were not aware that any work of this kind had been carried out (Box 3.6).

Box 3.6 Farmer comments about the lack of information about mastitis management

'it would have been nice to have learnt something on mastitis control and learnt things about different ways we approach mastitis'

'I think we all do lots of different things on mastitis and it would have been interesting to learn off other people'

'some of the actual (homeopathic) treatments are very good so therefore you could actually find the top people who use homeopathic treatments or use conventional treatments which ever it happened to be, you could get that information'

3.4 Raised awareness and motivation to improve

3.4.1 Raised awareness

The potential for a knowledgeable outsider viewing the herd with '*a fresh pair of eyes*' or '*someone else's eye*' to identify developing problems that might be missed on a day to day basis was valued highly and the opportunity for this to occur was much appreciated (Box 3.7).

Box 3.7 Farmer comments relating to the value of an independent view of their herd

'you do live with the cows all the time, you get very used to them and don't pick up on things'

'he can see things you don't see, because you see them all the time and don't see the gradual changes'

'you wouldn't pick it up yourself'

'no harm in him looking at cows as might see something I didn't pick up'

When reflecting on their experiences of participation in the assessment, farmers commented that it had raised their awareness about their animals' health and welfare and of factors that might affect animal health and welfare within their individual farming systems. They also remarked that the process had made them observe and think about their cow's behaviour and interaction with the environment in more detail. This was frequently in relation to the identification of the cause of injuries to the neck and hocks as well as abrasions and hair loss on other parts of the body (Box 3.8).

Box 3.8 Farmer comments relating to their improved observation of their cows

'I think it has made me more aware. When your walking through them you seem to cast your eye over different parts of the animal'

'it makes me observe my cows more carefully and think about what is going on'

'you view your cows a bit differently after'

'I've been more aware and have been thinking about it more'

3.4.2 Changes introduced

In addition to their enhanced observation of animals, most participating farmers had been keen to affect improvements and had changed at least one element of their system with the aim of better health and welfare for the herd. The main foci for change were the causes of lameness, dirtyness, injuries from the environment mainly involving damage to hocks and necks and condition scoring.

a) Tackling lameness

More regular foot trimming and inspection of feet, particularly of cows with only slight lameness was the most common approach to reducing the number of lame cows in the herd. This, linked to better record keeping, helped to highlight successful treatments and cows with a persistent problem. Other approaches were to:

- repair and add concrete to known problem areas around the farm yard to prevent foot damage and
- increase the space available as loafing areas or as straw yards in order to improve the comfort and relieve the pressure on cows with previously only limited choice of resting space in which to lie down.

Where digital dermatitis was the cause of lameness, actions taken included the installation of footbaths, introduction of regular foot-bathing treatments and increased frequency of scraping of passageways to keep them cleaner and dryer and to prevent a build up of slurry on the heels of the cows.

b) Improving cleanliness

The starting point of change for many was observation and recognising the cause, when cows were becoming dirty. Some introduced trimming of cows, shaving of tails and washing of legs to prevent dung adhering and accumulating on the coat. However, scraping of passageways between cow cubicles more frequently was the main action taken. In some cases this was in conjunction with increasing the amount or changing the type of bedding material used.

c) Injuries from the environment

i. Cubicle housing

Attention relating to injuries from cubicle housing design features focused on hock damage, presumed to have been caused by abrasive surfaces or lack of space in the cubicles and damage to other parts of the body, caused by rising restrictions and cubicle design features. Actions taken to alleviate hock damage included

- removing or re-positioning head rails;
- increasing the amount of straw used;
- laying carpet over concrete surfaces and where cow mats were fitted and
- changing from sawdust to shredded paper as bedding material.

Examples of actions taken to prevent injuries to other parts of the body and rising restrictions caused by cubicles included

- raising of restricting head rails;
- replacement of side rails with straps;
- removal of the front of the cubicles so that cows could lunge forward more easily when rising;
- complete removal of the cubicles to form a straw yard and
- change from clamp to round bale silage so that a silage clamp area within the building could be used to provide more lying space for the cows.

ii. Feed barriers

On farms where feed barriers had been the cause of hair loss and calluses on the neck, adaptations introduced included

- a small amount of corrective maintenance;
- adjustment of the height of the top rail of the barrier;
- removal of the vertical bars on a barrier and
- replacement of a fixed rail with wire rope covered with a plastic piping.

d) Body condition

Since receiving the assessment and benchmarking results, a number of farms had introduced routine condition scoring of their cows in order that feed rations could be adjusted to maintain optimum body condition for stage of lactation and milk yield. This was either by '*keeping a closer eye*' on cow condition particularly towards the end of lactation or by condition scoring regularly on a monthly or bi-monthly basis.

3.4.3 Plans for changes

Where changes to systems in order to improve animal health and welfare were planned, the intention was usually for them to be in place in time for the next winter housing period. Most related to adaptations to cubicle housing to prevent injuries and rising restrictions, to change the type or increase the amount of bedding material used and to improve cleanliness of passageways by scraping out more frequently. Others aimed to improve cow tracks and pay more attention to foot trimming in order to reduce the amount of lameness in the herd.

3.4.4 Drivers for change

There was strong agreement amongst participants that the health and welfare of the cows and financial considerations were the main drivers for change on the farm. Most were of the opinion that the two were inextricably linked in that the health and welfare status of the cows would directly affect performance and therefore financial returns (Box 3.9). Importantly, comfort and even the 'happiness' of cows, together with the avoidance of stress and suffering, were also highlighted as drivers for change. It was also pointed out that personal satisfaction and wellbeing was an important element of this continuum that created mutual benefit and the impetus for change and welfare improvement.

Box 3.9 Comments about links between financial and welfare considerations as the main drivers for change

'the welfare of the animal is the most important thing because everything else will follow on from that. If you have a healthy animal then you are financially better off'

'financially it should be better if you can improve the wellbeing of the cow'

'if her welfare isn't good and she's unhealthy then she's not going to perform and therefore the financial side of things is going to come unstuck'

'if we can make the cows more comfortable and more happy, then hopefully they will give us more milk'

Some admitted that conditions recognised as having a more direct influence on profitability as well as on health and welfare, such as mastitis and lameness were the main focus of their attention (Box 3.10).

Box 3.10 Comments relating to financial considerations as drivers for change

'cows that are lame or got mastitis have a negative affect on your finances....it must be financial, financially practical whatever you do'

'I don't think that anyone could deny that the financial ones come first and it just so happens that things like lameness, the financial loss is big as well as the welfare problem, so the two go together, the same with mastitis'

3.4.5 View of animal welfare

When asked to define animal welfare farmers frequently referred to the concepts contained within the 'five freedoms' (FAWC 1992), and in particular the freedom to express normal behaviour. Most had an holistic, although somewhat anthropomorphic view of animal welfare, recognising that the achievement of good welfare depended upon a range of interdependent criteria being met. They considered the elimination of stress to be of prime importance in making cows more contented and happy (Box 3.11).

Box 3.11 Comments on what animal welfare means to farmers

'the freedom for them to behave naturally, to be free of any kind of pain, suffering, stress... if you can just eliminate stress for the animals and let them behave as natural as possible'

'the five basic freedoms, that's a reasonable place to start I think, freedom from hunger, thirst and injury and being able to express as normal behaviour as possible'

'a happy cow, one that's got the freedom to do pretty well as she likes that's reasonably well fed, got a good environment to live in, looks well, is comfortable'

'it's the general health and well being of the animal and whether they are happy or not they've got to be generally happy and well. Well they've got to have all those freedoms otherwise they're not happy'

'animal welfare is that the animal is happy and healthy, it's got to be not stressed'

'it is back to the holistic approach and reducing the stress on the animal whether it's the way she is grazing, the way she is housed or the throughput in the parlour ...there are so many things'

'definitely stress free, everything we do you know, we use a lot of homeopathy to help with stress'

3.4.6 Constraints to improvement

As well as being identified as an important driver for change, it was clear that financial considerations were also the limiting factor in most decision making processes relating to animal health and welfare (Box 3.12). Constraints to improving animal welfare on farm were largely related to housing issues and lack of finance to implement change that could be categorised into two different scenario:

- housing systems comprising of old cubicle housing of timber construction, often with no prospect of replacement and

- new and refurbished buildings incorporating cubicle housing and slurry systems, representing considerable and often recent investment.

Box 3.12 Comments about financial considerations and animal welfare

'if there is a problem then it would be rectified but there are certain constraints, like financial constraints'

'we mustn't bankrupt ourselves to do it, but I don't like the idea of cows in distress on my farm so I would want to have happy cows'

'you decide on the severity of the problem, then you decide on what course of action you've got to take, then you decide if you can afford it'

'the financial implications of any decision are paramount because there is no margin left to work with...'

a) Old housing systems

A number of farms were using cow cubicle housing of timber construction which were described as 'elderly' or 'between thirty and forty years of age'. These farmers were concerned that the cubicles in these systems were often too small for their cows and caused rising restrictions, leading to injuries to the animals. In addition, the layout of the systems was frequently poorly designed causing difficulties with daily management and incorporating cul-de-sac' at the end of rows of cubicles in some systems in which individual animals could become trapped and bullied by more dominant cows. However, these farmers felt restricted in the amount of adaptation that could be carried out to the cubicles to alleviate the problems, without risking the integrity of the whole building structure. In all instances, financial constraints meant that major changes or complete replacement of these housing systems was not viable (Box 3.13).

Box 3.13 Farmer comments regarding adaptation or replacement of old buildings

'he (the researcher) suggested that I take out some of the middle bars and put a rope partition in. I've seen cubicles where within one winter they've totally collapsed'

'he said, put ropes in there, but it's a part of the structure of the building so if I took them (the middle bars) out the shed could fall down'

'its all fairly elderly and unfortunately things always have to be done with a thought to the financial cost, don't they?'

'whether we scored well or badly I can't do anything about that, we can't just go and build a new shed. There are constraints like money'

'we haven't got money to reinvest in new buildings. All my buildings are forty years old'

b) New and refurbished housing systems

On other farms there had been significant investment in new housing and slurry management systems. Most had sought advice and had discussed their choice of cubicle design, flooring and slurry management system with other farmers, dairy industry experts and building manufacturers and suppliers. However, the health and welfare assessment revealed that injuries to cows still occurred, at all levels of severity, as a result of aspects of the environment in these systems. The most common injury was to the hocks, manifesting as hair loss, swelling or ulcerations, caused mainly by the type of surface or bedding material provided within the cubicles. The farmers were dismayed to learn that the abrasive qualities of concrete heel stones and cow mattresses, particularly when used in combination with sawdust bedding, were likely to be the main cause of these injuries. Whilst some were able to change the type of bedding used in order to improve cow comfort and reduce the incidence of hock damage, others were restricted in their choice of bedding materials by the slurry systems that were installed. Without the finance for considerable additional investment on replacing relatively new slurry handling systems, this was a major constraint to improved animal health and welfare on these farms (Box 3.14).

Box 3.14 Comments about recent investment in new housing systems

'like our cubicles of sawdust and mattresses .. its difficult to write off improvements you made four years ago, I'd have to go to a lot of straw and completely change the slurry system. When you're making an investment its got to be spread over 20 years'

'the hocks are really the biggest welfare thing that I can see in our setup that I really can't see an answer to bar putting in sand beds which, well it's no good for us, we just cannot do it, it's impossible. You do your best at the time, but it's with you for twenty odd years isn't it'

'swollen hocks, we don't know how we can change that, got mostly mattresses and sawdust so you've got that abrasion but because we've got slats you're limited to what you can use'

3.5 Veterinary support and herd health planning

3.5.1 Working relationship with veterinary advisor

It was clear that some participants had a very good working relationship with their veterinary advisors. A number of these farms had actively sought out a new veterinary advisor using information and recommendation from other organic farmers and had changed their veterinary practice in order to:

- improve the quality of veterinary support for, and interest in, their organic system;
- obtain advice and guidance about homeopathic treatments and
- retain their veterinarian when he moved to a different practice.

A number of the veterinarians attached to these farms had been interested enough to either be present for part of the on farm herd health and welfare assessment or attend the workshop and contribute to discussion of the results. Others had discussed the results with the farmer during one of their routine farm visits, supporting their clients and adding value their assessment results.

Other farmers had more limited contact or reported that they received very little veterinary input at all. For some this was a result of their determination to keep veterinary input to a minimum. However, others were dissatisfied with the service they had received from their veterinary practices and had become reluctant to involve their veterinarians in routine aspects of herd health and welfare management. These farmers complained that:

- there was a lack of continuity;
- they no longer had a vet specifically linked to their farm that they could call *'their own'* and
- they were only ever visited by newly qualified inexperienced veterinarians.

Here any discussions about the assessment results were described as *'brief'* or *'not in any depth'* as the veterinary advisor had little time to spare and had needed to rush away. Farmers considered that this approach taken by some practices was due to a lack of interest in and poor understanding of organic farming, stemming from a lack of training in the management of animal health, including reduced medicine use and the use of homeopathic treatments in these systems.

Whilst some had actively sought better service and changed veterinary practices others were either still thinking about making a change or appeared to accept the situation and manage with a minimum of veterinary input for all aspects of herd management.

3.5.2 Herd health plans

Opinion about the requirement for and value of herd health plans (HHPs) was divided. Furthermore, the degree to which HHPs had been developed as a useful management tool was clearly linked to the level of interest and quality of veterinary support available to the farmer. Where a good relationship between the veterinarian and the farmer had been established, HHPs had become a valuable aid to management of herd health (Box 3.15), and in one instance to the point of attending a course on health planning with their veterinary advisor. Furthermore, they admitted that the act of reviewing or adding information to the HHP caused them to give more thought to the problem concerned. Others highlighted the value of recording individual cases and treatments, even where no medication was given, and for reference purposes, including the withdrawal periods required by organic standards for any drugs that had been used.

Box 3.15 Positive comments regarding herd health plans

'the idea of a herd health plan is herd health'

'when I have to review it, it does make me do exactly that, review it, and think whether it is a herd problem or an individual problem'

'you think I've got to put this in the herd health plan and that immediately makes you think logically about what you're doing, that is one of the advantages of the health plan'

'if we do encounter a problem we always make sure that this (HHP) is updated. It is a working document not just something you have to have to get your National Dairy Farm Assurance Scheme'

In contrast, where veterinary support was less forthcoming farmers were not so convinced of the value of formal HHPs, believing that herd health planning was ongoing as part of day to day herd management. In many instances they saw no benefit in keeping detailed written records, but preferred to continue with their own system of management (Box 3.16) and admitted that the only reason for having a HHP was to comply with organic standards and for inspection purposes. Here the plans were reviewed once per year in preparation for the certification body annual inspection and rarely if ever referred to in the interim. Some explained that this was because, having written it, they were very familiar with the information it contained and nothing would be gained

by reading it once more. As a result farmers in this category were far less likely to involve their veterinary advisor in reviewing their HHP as in these circumstances the time and expense of this was difficult to justify.

Box 3.16 Negative comments regarding herd health plans

'if you do your job properly, you shouldn't have to write it down'

'to write it down on the herd health plan doesn't mean anything, I've already got it up in my head'

'we do herd health planning in a less formal way than trying to write it down'

'my active health plan and not my written health plan that's how I would describe it. Yes we're doing it. That's reviewed like rolling reviewed, but it's not actually recorded in the herd health plan'

3.6 Value of assessment and benchmarking

3.6.1 Presentation of assessment results

In the first instance farmers were interested to compare their own herd health and welfare assessment results with those of other organic producers in order to establish where they stood in the 'league table'. There was also interest in comparison with non-organic farms, as it was anticipated that results could be used to differentiate organic from other dairy produce and so develop a marketing advantage. However, the main focus of attention was on the identification of particular strengths and weaknesses and how improvements to weaker elements might be affected within their own individual systems. Farmers were appreciative of the opportunity provided by the workshop for discussion, sharing of information and viewpoints about the benchmarking results which, through comparison across farms, demonstrated what they might be able to achieve. They were also appreciative of the way in which the results report, including photographic examples of animal based measures assessed at mild, moderate and severe levels of severity, was presented. It was very apparent that the time invested in giving a clear explanation of the scoring methodology used in the assessment was key to improving farmers' understanding and interpretation of their results and added value to the whole assessment and benchmarking exercise. Several commented that the assessment report and scoring system

- were much more useful and were referred to more frequently than the HHP;
- would be kept and used in conjunction with the HHP and
- elements would be incorporated into the HHP when next reviewed.

3.6.2 Within farm versus between farm comparison

For each of the measures assessed quintile ranges and individual farm position and rank were reported in colour coded format from green for the lowest through pale green, yellow and orange to red for the highest incidence recorded (see Appendix 2). Keen to improve their on situation year on year, farmers were interested to learn if management or structural changes they had introduced to systems translated into improvements to herd health and welfare. There was continued interest in individual performance within the benchmarking league table, with farmers expressing the wish to eliminate scores in the red band of the scoring system and achieve the lowest incidence of occurrence of each measure within the whole group of farms. Nevertheless, a number of participants suggested that breed, calving pattern, herd size, housing and other system differences made benchmarking between farms less useful than it might at first appear. Instead they were of the opinion that year on year within farm comparison was the more useful measure to determine where progress had been made and to continue to monitor individual strengths and weaknesses (Box 3.17). Interestingly, this viewpoint was common to farmers both with the benefit of two years and those with just one year of health and welfare assessment results.

Box 3.17 Comments about within farm versus between farms year on year comparison

'with the difference in breed and what I'm looking at is perhaps not the same sort of problems that, that other people are looking at'

'I'm not really looking at the others to be honest. Every farm is different and every farmer's got different ideas about what constitutes good management'

'I was interested on the year on year comparison on the paperwork and we could see between us how things had progressed. I was benchmarking against myself more than the others'

'first year I was very interested in other people, and the second year, you are also comparing with yourself because you've got a result to compare against'

However, larger farms with more than one dairy herd under the same management considered that comparison between herds within their holding could be a useful management tool and serve to focus staff attention on specific issues and reasons for differences between the herds.

3.6.3 Follow up assessment

a) Timescales

Implicit in these comments was the desire to participate in further on-farm health and welfare assessment and to continue the process of improvement into the future. Although farmers suggested a range of timescales from six months to five years, within which repeat assessments should occur, most considered that the interval should be greater than one year. This was because their experience had shown that however determined individuals might be, it could take more than one year to affect improvement. They also warned that if carried out too frequently, participants might get bored with the process and lose their enthusiasm for attending workshops and contributing to discussions on the subject. Those suggesting only a six month interval between assessments were interested in evaluating herd health and welfare during the summer grazing season as well as the winter housing period.

b) The assessor

Farmer participants expressed their disappointment that the veterinary researcher who carried out the previous assessments would no longer be available to continue any follow up assessment work. They were very clear that self assessment of herd health and welfare would be unsuccessful for a variety of reasons (Box 3.18) and stressed that whoever was to carry out the work should have the right personality, be prepared to build a

Box 3.18 Comments regarding self assessment of animal health and welfare

'I don't think you would ever get round to doing it properly'

'I'm not going to self administer one of these. The fact that somebody else comes in to do it means it gets done and it gets done well'

'you could never be objective I don't think, um, some people would score themselves down terribly and other people would score themselves up terribly and I think you'd loose the whole use of it really'

'I don't know if I would be sort of strict enough on it, that's the trouble isn't it?'

relationship and have empathy with the farmer. Most considered that the ideal assessor would be a veterinarian with a farm and cattle background. Others thought that whilst a veterinary qualification was probably not essential, the assessor should have a clear understanding of farm animal health and welfare and the purpose of the assessment. It was also thought important that they had a real interest in cows or from a dairy background and had what was termed 'veterinary understanding'. With few exceptions, people already carrying out farm inspections on behalf of organic certification bodies or quality assurance schemes were considered either unsuitable or under too much pressure from their existing workload to carry out the assessments effectively. It was also noted that involvement of inspection bodies would mean the loss of the voluntary nature and farmer ownership of the assessment process (Box 3.19).

Box 3.19 Comments regarding suitability of inspectors as health and welfare assessors

'they're (inspectors) not vets, they're not even farmers'

'they (inspectors) know less about animals than we do and I would be nervous that basically an admin type person is going to be up to it, unless they happen to have a background in that'

'so many of your ordinary inspectors just do it as a job and as long as they get the right ticks on the right boxes at the end of the day they go home satisfied. They aren't terrifically interested in the welfare of the cows'

'the certification inspector spends a day with us now, a pretty full day and still doesn't cover more than half of it properly really, so I shouldn't imagine they'd be able to do it, plus the fact a lot of them are pretty office minded'

'the annual inspection always takes far too long anyway. It always takes a day. No there just wouldn't be time to do it'

'it wouldn't be voluntary anymore if my organic inspector is going to come and do it'

'with the inspectors you can't say anything if you think they're talking through the tops of their heads but if its something that you've agreed to do off your own back then you can say I think you've got that wrong or whatever, which is a useful side of it'

'when you've got your (organic) inspection its them and us, and its get them in, get them gone, but with this (the health and welfare assessment) its more fun, its not a mundane chore that's got to be done, its come in go through it all and its all beneficial'

Farmers also voiced concerns over inter-observer reliability. Of utmost concern was that continuity and the validity of any comparison between farms and between years might be lost if more than one person carried out the assessments for a particular group of farms. It was therefore considered essential that the same person carried out all of their assessments. It was even suggested that a commitment to do this for up to four years would be necessary to ensure that results were of value and contribute to improved farm animal welfare.

c) Payment

The issue of payment for an assessment and benchmarking service was raised by a number of farmers. Some thought that it was inevitable that they would eventually have to pay to have their herds assessed, whilst others thought that it might become part of existing inspections and so covered by the fees they already paid. A few participants stated that they would pay for the service if the price was right in terms of value for money, provided a sufficient number of farmers were recruited to the scheme to ensure the generation of meaningful benchmarking results.

4. Discussion

4.1 The themes

The five cross cutting themes identified from analysis of the interview transcripts reflect the main issues and subject areas that created the greatest amount of comment and discussion by the participating farmers. The titles which were assigned to each of the themes reflect the researchers understanding of as well as sensitivity and closeness to the information conveyed by farmers during the qualitative research interviews. Within each theme important points worthy of serious consideration in the development of farm animal welfare assessment processes were highlighted.

4.2 Sensitivities and misgivings

This investigation revealed a keen interest and willingness amongst farmers to participate and have the health and welfare of their dairy herds assessed. This appeared to be driven by pride in both their farming systems and in their animals. This interest and enthusiasm is a important asset that, if handled sympathetically, could make a valuable contribution to the achievement of targets set by the Animal Health and Welfare Strategy for Great Britain for improved farm animal health and welfare (DEFRA, 2004). However, the sensitive nature of the assessment exercise revealed by this study cannot be overemphasised. This first became apparent when farmers declared feelings of exposure and vulnerability, even in a situation where they had invited the researcher/assessor onto their farm in the knowledge that there were no links with inspection bodies and that a completely impartial viewpoint would be provided without any pressure to take action.

This sensitivity again manifested itself in the form of feelings of failure and disappointment experienced by participants upon receipt of the assessment results. This served to highlight the importance of ensuring clear understanding of the whole process, the scoring methodology and the reporting format if farmers are to accurately interpret and be encouraged to make use of both their individual and the group benchmarking results.

Further issues of sensitivity, this time in relation to information generated by on farm animal health and welfare assessment were specifically highlighted by participants. They felt threatened by the potential for mis-interpretation and mis-use of the results by pressure groups and the press in the absence of clear explanation and understanding of the assessment procedure and scoring methodologies employed. Linked to this were concerns that the process might become the basis of new legislation thereby changing the emphasis from voluntary participation to a regulatory process.

The sensitivities identified and misgivings expressed here are comparable with findings of Vaarst (2003), who described the concept of 'us and them' as a key theme across qualitative interviews conducted with nine pig farmer participants in an animal welfare assessment system in Denmark. The same author suggested that the welfare assessment should be used as an advisory tool adapted to individual farm conditions and pointed out that an advisory tool should be used as a communication platform for farmers and their advisors. In support of this viewpoint, a recent survey of organic livestock advisors and inspectors recommended that there should be careful consideration regarding formal welfare assessment at farm level and stressed the importance of farmer 'ownership' of the process in the achievement of enhanced animal welfare (Hovi *et.al.*, 2003).

4.3 Acceptability of scoring methodology and welfare indicators

4.3.1 Scoring system

If farmer ownership of on farm welfare assessment is to be established as a practical tool, farmer viewpoint regarding the assessment methods employed and the welfare indicators assessed must be considered. Farmers in this study had criticised scores applied at very mild levels of severity, particularly of dirtiness, lameness and injuries from the environment and of negative scores for largely out-wintered animals with thick and hairy coats. With regard to mild levels of lameness, the impracticality of this level of measurement and its irrelevance to day to day herd health and welfare management was highlighted. Furthermore, difficulty in detection of lameness cases at a very mild level of severity appeared to have lead to a down-grading of its importance at this level and even expressions of relief at receiving these scores. Similarly, dirty limbs at a very mild level were considered acceptable, if not normal. In contrast, the potential for mild levels of hock damage to escalate into more serious conditions was clearly recognised and was the subject of considerable debate and concern. In effect, individual farmers were developing their own scoring system with which they felt more comfortable and able to cope and which was based on knowledge of and relevant to their own farming system and their own view of the seriousness of the problem encountered.

The farmers' way of resolving the problem may have stemmed from the fact that a scoring system based on zero tolerance of the presence of any of the welfare indicators assessed had been used, even though their total absence, even in the most extensive or natural environment, would be difficult to achieve. This approach, resulting in mostly negative scores with little prospect of a positive result, is likely to erode confidence and enthusiasm and reduce the effectiveness of the assessment process in achieving improved animal welfare. To guard against this a more positive approach is needed which

- builds upon the interest and motivation revealed by this study;
- takes into account the difficulties of practical application on farm and
- sets goals that are realistic and achievable within commercial farm settings.

This is in agreement with Leeb *et.al.* (2004) who considered that further work on defining positive parameters for the assessment of welfare is required. Furthermore, Ellis and Hovi, (2003) suggested that the evaluation of animal welfare should be objective, repeatable and practical at farm level and that the significance of certain factors to animal welfare and acceptable tolerance levels should be determined. More recently it was proposed that intervention guidelines should be developed and periodically reviewed in the light of assessment results (DEFRA, 2004).

4.3.2 Health and welfare indicators

Whilst farmers understood the relevance to herd health and welfare of most of the indicators assessed, they were not at all supportive of the inclusion of the measure 'cows idling' about which little is understood at this point in time (Huxley, 2003 personal communication).

The flight or avoidance distance was used to measure the reaction and level of fearfulness of an animal to a human, in order to evaluate the quality of stockmanship on participating farms. However, farmers questioned the validity of the results as they considered that their cows would be less settled than usual if a stranger walking amongst them tried to approach them. The links between stockpersons' attitudes, human-animal interactions and animal welfare and productivity in farming systems is well documented (Seabrook and Bartle, 1992; Hemsworth *et.al.* 1993; Hemsworth and Coleman, 1998) and the inclusion of a measure of fearfulness of the animals in order to obtain an indication of the quality of stockmanship on individual farms is pertinent to health and welfare assessment. However, in a number of earlier studies, fearfulness of animals to humans was assessed by measuring the length of time an animal was prepared to stay near to a stationary researcher. This was described as a willingness to approach (Hemsworth, 1997) rather than a distance to flight test. Farmer participants might consider this to be a more appropriate 'animal based' test to apply to this indicator in on farm welfare assessment, so make its inclusion in future assessments worthy of further investigation.

The view that the herd health and welfare assessment should have included the dry cows in the herd as well as those in milk at the time of the assessment was widely held by participants. Some went on to suggest that a whole herd picture, including in-calf heifers, dairy young stock, calves and bulls, should be the ultimate aim. Assessment protocols for dairy and beef cattle have been developed (Main *et.al.* 2004) which could be utilised to cover all but the young calves in dairy systems. For a complete dairy herd picture to be built an assessment protocol for calves would be required.

The whole herd picture was further expanded by respondents to include measures covering medicine use, mastitis management, fertility and calving indices, reasons for culling and culling rate, so moving on from purely animal based measures used in this health and welfare assessment to incorporate and relate the results to management and production related parameters. This was in part to fulfil the desire of participants to obtain as much detail as possible for themselves from the assessment process, but also to make the link between the assessment results, management decisions and outcomes in terms of production parameters. This important step of integration of herd health and welfare assessment results from animal based measures into whole farm management immediately added value to the process, transforming it into a tool with which to identify management or resource based measures (Keeling and Veissier, 2005) in need of adjustment or refinement in order to affect animal welfare improvement. Thus, farmers had begun to develop their own blue print for a whole herd health and welfare programme as a result of enthusiasm and motivation generated by their voluntary participation in and the support and encouragement they had received as part of the comparative health and welfare assessment exercise. This is an exciting progression that has the potential to lead the development of farm specific whole herd health and welfare management programmes to include a system that:

- farmers like and understand;
- fits into individual systems and
- has real value as a tool for the management of health and welfare of farm animals.

It is recommended that this concept of a farm specific whole herd health and welfare programme is developed further.

4.4 Welfare improvement

Raised awareness of animal health and welfare was a major achievement brought about by the comparative assessment process. A new understanding of the potential for alteration to management and resource based measures to affect welfare outcomes clearly motivated farmers to make changes and strive to improve. Additionally, the intricacies of animal welfare and its influence on performance and productivity were well recognised. In most cases the focus for change was related to housing issues. However, there was often conflict between the will to improve and the ability to finance improvement beyond relatively simple changes. Furthermore some of the changes made by farmers between Phases 1 and 2 of the on-farm assessment and benchmarking study did not always result in welfare improvement (Huxley, 2005). This highlighted a clear need for:

- support and advice leading to informed decision making and ensuring that the changes made are appropriate to the situation;
- follow-up assistance with management of changes intended to achieve animal welfare improvements;
- documentation of the process of both successful and unsuccessful attempts to affect welfare improvement and
- an animal welfare payment scheme to assist in making improvements in animal welfare, to act as an incentive and reward the achievement of improved welfare status, whilst at the same time, easing the financial burden for farmers. This should be linked to the updating and redevelopment of farm buildings where such action is justified on animal health and welfare grounds.

Before this can be successfully implemented, the need for new knowledge on the identification of changes likely to improve animal welfare and the timescale within which improvements can be expected to occur must be addressed. There is an urgent need for investigation and clarification of these issues.

4.5 Veterinary support and herd health planning

The influence of veterinary support on farmers' attitudes towards the development of HHPs, interpretation of the assessment results and implementation of change with a view to achieving welfare improvement cannot be understated. Where good working relationships had been established, and veterinary support was forthcoming it was more likely that the comparative assessment results had been discussed and solutions to problems highlighted sought. It was also more likely that the HHP would be used as a working document and updated with action points based upon the assessment results. However, in situations with little or no veterinary support the HHP usually existed solely to comply with standards. Many of these farmers considered that veterinarians were sceptical of and lacked interest and basic knowledge in organic production. Interestingly, similar sentiments were also expressed by Danish organic dairy farmers (Vaarst *et.al.*, 2003). Farmers in this study were of the opinion that veterinary training should include organic farming principles, preventative and reduced medicine use and homeopathy. In support of this viewpoint, Huxley (2005) suggested that there was a need for the veterinary profession to deliver cost effective disease interventions and preventive medicine programmes with the aim of reducing disease and improving health and welfare standards, leading to increased profitability of dairy farming. Also in accordance with the view that veterinarians lacked interest in and an understanding of organic farming, Hovi *et.al.* (2003) recommended that training in organic principles should be introduced into the curriculum of veterinary schools in order to improve veterinary support in this sector.

4.6 Value of assessment and benchmarking

Participating farmers were hopeful that the results of the health and welfare assessment could play a useful role in:

- promoting the benefits of organic farming to food retailers;
- assisting the general public in identifying products from animal welfare friendly production systems and
- adding value to their farm produce.

This sentiment was in accordance with the findings of a recent European consumer survey that highlighted the need for both greater transparency and reliable information about the way in which animal based products are produced (European Commission, 2005).

Systematic welfare assessment across farms allowed welfare benchmarking of the results. This process assisted in the identification of individual strengths and weaknesses and highlighted the level and range of scores achieved for each measure assessed (Burke *et.al.* 2004; Huxley *et.al.* 2004). This demonstrated not only what it was possible to achieve on an individual basis, but also where potential problem areas lie and where welfare improvement might be particularly challenging for the assessment group as a whole.

There was no doubt that benchmarking introduced a competitive element which created some of the impetus for change by motivating farmers to examine the weak points in their production systems and find solutions, in order to improve animal welfare. However, the possibility that a significant improvement in animal welfare might be difficult to achieve in the short term should be born in mind. Thus it was considered important that the time

interval between assessments should be greater than one year in order that successes could be better identified and enthusiasm and motivation of farmers, vital if ongoing improvement is to be achieved, were protected and maintained. Crucial to this is the degree of reliability and consistency of assessments carried out by an individual assessor, as well as between assessors, that could be achieved and its effect on the validity of both between farms and year on year assessments and benchmarking results. The farmers shared the view that the degree of inter and intra-observer reliability required would be difficult to achieve and that this has the potential to reduce the value of the comparative assessment process. In accordance with this viewpoint, it is acknowledged that whilst it is important to strive for consistency, a certain degree of assessment error between observers is inevitable (DEFRA, 2004). Therefore the importance of training, monitoring and regular updating of assessors to reduce the potential for error and minimise the impact on farming businesses should not be underestimated.

4.7 The qualitative approach

The study used a qualitative approach to gather insights on farmers' perception and opinion. Whilst effective in achieving this, the methodology is expensive, time consuming and can be intrusive. Further, the results of the qualitative enquiry are presented as a descriptive account based upon the observations and interpretation of the meaning of what was said and contained in the interview material, by the researcher (Wolcott, 1994) rather than attempting to quantify opinion or experience (Kvale, 1996). However, without some method of evaluating the opinions of those that most directly influence farm animal welfare, further developments are always going to be limited. What is now required is to develop simpler yet robust approaches that enable farmer perception and opinion to be included as key elements in future herd health and welfare endeavours. Clarity of purpose would appear to be an imperative. A starting point may be to examine the approach taken by other disciplines, such as human medicine and environmental management.

5. Conclusions

This study demonstrated a strong interest and willingness amongst farmers to access outside opinion about animal health and welfare on their farms. Comparative assessment clearly provided a vehicle for discussion and the motivation to examine the weaker points identified in the farming systems and find solutions, in order to improve animal welfare. It is important that the goals set for improvement are realistic and achievable within the constraints of individual farming systems if this interest and enthusiasm is to be maintained. It was apparent that the main focus for change was related to housing issues, whilst the main constraints to welfare improvement were a shortage of finance to affect change beyond relatively simple alterations and a lack of information on the identification of changes likely to improve animal welfare in given situations.

6. Recommendations

6.1 An important consideration in the further development of animal health and welfare assessment is the preservation of the interest and motivation of farmers involved. The feelings of failure and disappointment experienced by individuals in this study highlighted the requirement for clear understanding by subjects of the assessment process, the rationale behind the selection of indicators used, the scoring method employed and the results generated.

It is recommended that the provision of clear explanation and support is built into all future development and implementation of on-farm welfare assessments to ensure that individuals and groups of farmers fully understand the process in which they participate.

6.2 To further maintain farmer interest and co-operation, a positive approach should be adopted providing encouragement and reward for achievement rather than penalties for failure or underachievement. Furthermore, it is considered that the inclusion of measures with only tenuous links to animal health and welfare in assessment protocols is counter productive and undermines the overall credibility of the process.

It is recommended that

- *a system of acceptable tolerance levels of welfare indicators is developed in conjunction with a scoring system that applies positive scores to the assessment procedure which takes into account the difficulties of practical application on farm and establishes realistic and achievable goals in welfare improvement.*
- *assessment protocols should only include indicators proven by sound scientific evidence to be appropriate to the goal of improved farm animal health and welfare.*

6.3 A full picture of dairy herd health and welfare should include all ages and classes of stock. Assessment protocols have been developed for dairy and beef cattle which could be utilised for all but young calves in dairy systems.

There is a requirement for the development of an assessment protocol for calves in order that a complete picture of dairy herd health and welfare can be produced.

6.4 The linking of health and welfare assessment to management and production related parameters has potential to lead to the development of farm specific whole herd health and welfare management programmes that farmers like and understand and that have real value as a tool for the management of health and welfare of farm animals.

It is recommended that the concept of whole herd health and welfare management programme is developed further to include farmer participation, consultation and ownership of the process.

6.5 This study has highlighted a clear requirement for new knowledge on the identification of changes to structure or management systems likely to improve animal welfare and the timescale within which improvements can be expected to occur.

It is recommended that the need for investigation and clarification of which changes are likely to improve animal welfare and the timescale within which improvements can be expected to occur within farming systems is addressed before widespread implementation of farm animal health and welfare assessment is introduced.

It is further recommended that implementation of farm animal health and welfare assessment should include provision for

- *a support and advisory system to assist farmers to make informed decisions and ensure that the changes made are appropriate to the situation;*
- *follow-up assistance with management of changes intended to achieve animal welfare improvements;*
- *documentation of the process of both successful and unsuccessful attempts to affect welfare improvement.*

6.6 This study revealed that the main constraints to animal welfare improvement on farm were linked to housing issues and lack of finance to implement change.

It is strongly recommended that an animal welfare payment scheme is introduced to

- *assist in making improvements in animal welfare*
- *act as an incentive and reward the achievement of improved welfare status, whilst at the same time,*
- *ease the financial burden for farmers.*

This should be linked to the updating and redevelopment of farm buildings where such action is justified on animal health and welfare grounds.

6.7 A shortfall in veterinary support on organic farms was evident on some farms, apparently due to a lack of interest and basic knowledge in organic production.

To address this shortfall veterinary training should be expanded to include organic farming principles, preventive and reduced medicine use and homeopathy.

6.8 Comparative assessment can be used to identify more common problem areas that affect several farms and where achieving improvement might be particularly challenging.

It is recommended that in order that such problematic issues are identified, the formation of assessment groups of farms should be supported and encouraged. It is further recommended that areas where difficulties in affecting welfare improvement are experienced should be targeted for further research.

6.9 The achievement of acceptable levels of consistency and reliability of assessment both between assessors and by individuals is essential if the potential for error and any impact on farming businesses are to be avoided.

A system of training and accreditation of assessors that includes regular monitoring of performance and updating of skills should be developed as an integral part of farm animal health and welfare assessment. It is

recommended that the evaluation of the consistency and reliability of welfare assessment over time, and the impacts of potential errors on farming businesses should be made the focus of future research.

6.10 Without some method of evaluating the opinions of those that most directly influence farm animal welfare, further developments are always going to be limited.

What is now required is to develop simpler yet robust approaches that enable farmer perception and opinion to be included as key elements in future herd health and welfare endeavours. Clarity of purpose would appear to be an imperative. A starting point may be to examine the approach taken by other disciplines, such as human medicine and environmental management.

7. Communicated outputs

7.1 First Annual Congress of the European Union project QualityLowInputFood and Soil Association Conference, 6-9 January 2005, University of Newcastle, Newcastle upon Tyne, UK

Burke, J. and Roderick, S. 2005. Health and welfare assessment and benchmarking: a farmer's perspective. First Annual Congress or the European Union project QualityLowInputFood and Soil Association Conference, 6-9 January 2005, University of Newcastle, Newcastle upon Tyne, UK

Oral presentation in Technical Seminar 33, Improving health management in dairy cows.

7.2 Assessment of Animal Welfare at Farm and Group Level, 3rd International Workshop WAFL-05, September 22-24 2005, University of Veterinary Medicine, Vienna, Austria

Burke, J., Roderick, S., Huxley, J, N., Whay, H.R. and Main, D.C.J. 2005. Evaluation of on-farm welfare assessment by qualitative interviews. Abstracts of Oral Presentations and Posters, Assessment of Animal Welfare at Farm and Group Level, 3rd International Workshop WAFL-05, September 22-24 2005, University of Veterinary Medicine, Vienna, Austria.

Oral presentation in Session: Data applications and further use.

7.3 Dairy Herd Health and Welfare Assessment and Benchmarking: results and impact on farming systems. Public Meeting 26th October 2005, Nantyllyn Motel, Pembrokeshire, Wales

Farmer feedback following participation in the assessment and benchmarking exercise and the impact and outcomes on the farm. Oral presentation to an audience of farmers, veterinarians and advisors. Part funded and organised by Organic Centre Wales.

7.4 A presentation about the impact of herd health and welfare assessment and benchmarking on farming systems and herd health and welfare planning was given to trainee herd health plan assessors at a seminar at Duchy College, Wadebridge Centre.

7.5 Regular updates about the organic dairy herd health and welfare assessment and benchmarking and the impact on farming systems have been published in the **Organic Studies Centre Technical Bulletins**.

7.6 A summary of the comparative herd health and welfare assessment work and the evaluation by qualitative interviews of its impact on organic farming systems will be presented at a **meeting of veterinary practices** on 18th January 2006.

7.7 A copy of the Final Report has been requested by the Chief Executive, Freedom Food Ltd.

Copies of published abstracts, presentations and feedback from the OCW meeting are included in Appendix 3.

Acknowledgements

Funding support provided by DEFRA for this study is gratefully acknowledged. This study would not have been possible without the support and enthusiasm of the 28 organic dairy farmers involved and the previous study . funded by the Organic Milk Suppliers Co-operative Ltd., Mole Valley Farmers Ltd., Milk Link, the British Cattle Veterinary Association and Objective One (EAGGF and DEFRA). Thanks are due to Dr Jon Huxley, Dr Becky Whay and Dr David Main, University of Bristol for their collaboration in this earlier work. I acknowledge and thank Dr Stephen Roderick for his support during the project and for his valuable comments on the manuscript.

References to published material

9. This section should be used to record links (hypertext links where possible) or references to other published material generated by, or relating to this project.

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