

CORE Organic

ANIPLAN

Report from the 1st ANIPLAN project workshop,
Hellevad, October 2007

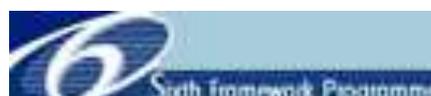
Planning for better animal health and welfare



Mette Vaarst (AU) & Stephen Roderick (Duchy College) (editors)

CORE Organic project nr. 1903

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This project is one of the eight research pilot projects selected in 2007 for transnational funding by the partners of the CORE Organic ERA-net project. The pilot projects, which are running in the period 2007 – 2010, are:

AGTEC-Org: Methods to improve quality in organic wheat: actec.coreportal.org

ANIPLAN: Planning for better animal health and welfare: aniplan.coreportal.org

FCP: How to communicate ethical values: fcp.coreportal.org

COREPIG: A tool to prevent diseases and parasites in organic pig herds: corepig.coreportal.org

iPOPY: More organic food for young people: ipopy.coreportal.org

PathOrganic: Assessing and Reducing Risks of Pathogen Contamination: pathorganic.coreportal.org

PHYTOMILK: What makes organic milk healthy?: phytomilk.coreportal.org

QACCP: How to assure safety, health and sensory qualities of organic products: qaccp.coreportal.org

For further information see the project homepage at www.coreorganic.org

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Foreword

'Minimising medicine use in organic dairy herds through animal health and welfare planning', ANIPLAN, is a CORE-Organic project (Project no. 011716) which was initiated in June 2007. These proceedings represent our first results in terms of presented papers and discussions at our first project workshop, and they contain a review of Animal Health Planning.

The content of the workshop proceedings reflect the aim and starting points of all work packages, both in terms of analyses prior to the workshop, and developments during the workshop emanating from group work. In these proceedings, Christoph Winckler provides an overview of the use of animal based parameters based on the results of the WelfareQuality project. Christopher Atkinson and Madeleine Neale presented concepts, principles and the practicalities of Animal Health Planning and Animal Health Plans based on UK experiences. They raised an important point regarding the development of common principles across the participating countries i.e. there are two elements to the process: the 'planning' is the process, and the 'plan' provides documentation of the planning process. Pip Nicholas from The University of Wales, Aberystwyth produced a report reviewing the current use of animal health and welfare planning. The entire document is included in these workshop proceedings. This was supplemented through presentations from all countries regarding animal health and welfare planning processes and research. These are summarised together with the concepts developed through dialogue at the workshop in the paper by Nicholas, Vaarst and Roderick. Finally, the Danish Stable School principles were presented by Mette Vaarst followed by discussion on different approaches of communication in farmer groups and at the individual level between farmers and advisors.

Our first project workshop took place in Hellevad Vandmølle, which proved to be a perfect venue for the discussions and to develop the work spirit in the project. Being the only group at this small resource centre enabled us to work from early morning till late evening. The host couple Elsebeth Junker and Bjarne Boesen are warmly and greatly thanked for the openness, the warm atmosphere and the wonderful organic, home-made food – it was a great place to stay.

During the workshop, we visited a farm, where we trained and tried out some of the animal based assessments on grazing Danish dairy cows. Farmers Peter Kaczmarek and Asmus Asmussen are warmly acknowledged for opening their farm to our international groups – thank you to Asmus for answering very many questions from us. The access to your farm helped us very much in the discussions about the practical aspects of animal welfare assessment. Thanks to organic advisor Kirstine Lauridsen for the farm contact.

Our secretary Mette Holme from the Department of Animal Health, Welfare and Nutrition is sincerely acknowledged for keeping the level of chaos to an absolute minimum, regarding the logistics, book keeping, communication, and generally 'everything related to this workshop'.

Tjele and Cornwall, February 2008

Mette Vaarst & Stephen Roderick
Editors

ANIPLAN – not just ‘any plan’

Project presentation and report from the 1st workshop in the European CORE-Organic project ‘Minimising medicine use in organic dairy herds through animal health and welfare planning’

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Introduction

Livestock farming is an important part of organic farming systems, and it is an explicit goal of organic farming to ensure high levels of animal health and welfare (AHW) through proactive and appropriate management of breeding, feeding, housing and species specific husbandry. A goal in organic livestock farming is to minimise the use of veterinary medicines to improve food quality and protect the environment, and to do this by improving livestock living conditions rather than using alternative medical treatments. Key values influencing organic livestock production are naturalness, harmony at all levels of production, use and recirculation of local resources and adoption of the precautionary principle. The concepts of "positive health and welfare" are incorporated in EU Regulation 2092/91 on organic production. The farmer must ensure that farm animals can perform natural behaviours and live natural lives, but at the same time he/she must intervene when necessary and at first signs of disharmony in the herd.

High levels of AHW are not guaranteed merely by farming to organic standards. This is a conclusion from two EU network projects, "Network for Animal Health and Welfare in Organic Agriculture (NAHWOA) and "Sustaining Animal Health and Welfare in Organic Farming" (SAFO). The principles and regulation of organic farming were shown not always to be well implemented in organic herds. This was associated with a lack of awareness and education among farmers and advisors, and in many cases concerns that regional and national conditions and traditions were compromising organic principles and regulations. Therefore, both networks recommended implementation of individual animal health plans to encourage organic farmers to work towards AHW promotion and disease prevention. The SAFO network also recommended a systematic evaluation of AHW in organic herds to ensure that not only minimum requirements are met but that positive health and welfare is practiced, thereby continuously increasing AHW levels in organic livestock systems.

Welfare assessment has been used to evaluate AHW in organic dairy herds in the UK, Austria, Germany, Switzerland, Norway and Denmark, *e.g.*, in research projects or through organic certification. One area often lacking in these assessment schemes is the use of animal based parameters to assess health and welfare. It is a basic premise in this paper that this requires greater emphasis. Recent knowledge developed through projects such as the EU-funded "Welfare Quality" is particularly relevant. Welfare assessment should include calves and young stock, and should also be better integrated with health planning. Animal health plans develop positive AHW through devising appropriate husbandry, if combined with continuous monitoring and assessment. They can also enable farmers to achieve disease reduction goals through the systematic setting of health targets and plans of how to reach these. In European countries, various animal health advisory service and animal health planning concepts have been developed, which can serve as a source of inspiration in the development of a set of principles for animal health and welfare planning.

If animal health plans are to gain widespread use among organic farmers, communication with the farming community is crucial. A creative dialogue with the individual farmer is also necessary when identifying goals and planning means to reach these goals. Communication regarding the role and benefits of AHW assessment systems, such as benchmarking, may be the catalyst needed to aid farmers to accept and use health and welfare planning. Such communication can take place as part of health advisory systems or within farmer groups. Current research and development activities in Denmark, Norway, Switzerland and the Netherlands show the benefits of such a dialogue.

Based on these various project experiences and results and research questions from different European countries, a research project entitled 'Minimising medicine use in organic dairy herds through animal health and welfare planning' was initiated in mid-2007 with the aim as indicated in the title. This paper introduces the project. The first project meeting and workshop was held in Hellevad in Denmark on the 9th-12th October 2007. A summary of the outputs from the workshop is provided here. The anticipated project activities are also outlined. The project will adopt the name ANIPLAN.

The project

Objectives

The main aim of the project is to investigate active and well planned animal health and welfare promotion and disease prevention as a means of minimising medicine use in organic dairy herds.

This aim will be met through the following intermediate objectives:

- 1) Develop animal health and welfare planning principles for organic dairy farms under diverse conditions based on an evaluation of current experiences.
- 2) Application of animal health and welfare assessment based on the WelfareQuality parameters in different types of organic dairy herds across Europe. This will result in an overview of the herds and allow for potential adaptations for the organic situation (e.g. pasture systems, longer cow/calf contact). For calves, a special system will be developed by the Norwegian partners, and combined and tested together with the WelfareQuality assessment system.
- 3) Develop guidelines for communication about animal health and welfare promotion in different settings, for example, as part of existing animal health advisory services or farmer groups such as the Danish Stable School system and the Dutch network programme.

Project structure

The project is divided into the following five work packages, four of which comprise research activities with the other focused on coordination and knowledge transfer, through meetings, workshops and publications.

WP1: Coordination and knowledge transfer

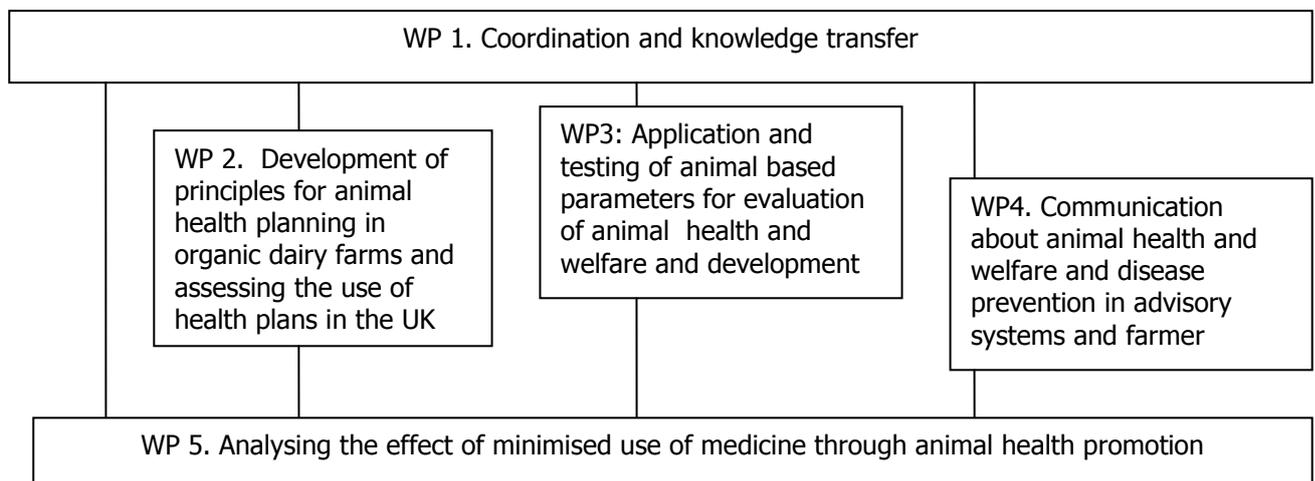
WP2: Development of principles for animal health and welfare planning in organic dairy farms

WP3: Application of animal based parameters for evaluation of animal health and welfare in dairy cattle and development of animal based parameters for calves, and the inclusion of these measures into animal health and welfare plans.

WP4: Communication about animal health and welfare and disease prevention in advisory systems and farmer groups

WP5: Analysing the effect of minimised use of medicine through animal health promotion

The relationship between these work packages is summarised below.



Expected focus and research activities within the five work packages

WP1: Coordination and knowledge transfer. Four project workshops are planned, the outputs from which will be published as proceedings. National stakeholder meetings will also be organised in all participating countries, involving CORE project group members where appropriate. Administration of the project, the production of newsletters and the design and maintenance of the website are all managed in this work package. N.B. individual country members will also administer and report activities in line with national funding agreements.

WP2: Development of principles for animal health and welfare planning in organic dairy farms. In the UK, animal health planning is being increasingly promoted and implemented in both the organic and conventional livestock sectors, and health planning is compulsory for organic certification. Very little is known as to how health and welfare plans actually work in practice, and therefore experiences have been collected and reported in a literature review (in these proceedings).

As part of this work package, a Danish-based Ph.D studentship will explore:

- the way animal health plans are used in advisory/veterinary service;
- the way animal health plans are used by organic farmers during and after conversion to organic production; and
- the way animal health plans are used in organic certification and inspection

The work package will be led by the University of Wales and will form the basis for the development of activities in work packages 2, 3 and 4. Key principles will be developed during the process and these will form a common platform for all participating countries, and potentially across Europe.

WP3: Development and testing of animal based parameters for evaluation of animal health and welfare. This work package will focus on existing identified animal-based health and welfare parameters, which will in turn be adapted to the various conditions in the participating countries. Animal health and welfare will be assessed using these parameters on farms in all the participating countries and will be linked to currently funded existing national projects where appropriate. A common methodology for this work will be developed. Training in order to ensure consistency and repeatability will be conducted. A calf welfare plan will be developed using animal based welfare assessments. The calf welfare work will be led by Norwegian participants and will also include training.

WP4: Communication about animal health and welfare and disease prevention in advisory systems and farmer groups. In this work package, an evaluation of existing advisory systems and farmer groups will be conducted and will include evaluation of the potential development of these in situations where they do not currently exist. This will include an identification of the training needs of farmers, veterinarians and other animal health and welfare advisors. Based on this, communication principles for animal health and welfare promotion will be developed. Where appropriate, farmer groups based on the Danish Stable School principles for minimisation of medicine use through animal health and welfare promotion and disease prevention will be implemented. An evaluation of the effectiveness of communication with regard to the use of animal health and welfare plans will be included.

WP5: Analysing the effect of minimising the use of medicine through animal health promotion. Minimising antibiotic/medicine use through health promotion means promoting health and welfare through hygiene, outdoor access, etc. and not merely focusing on disease. Animal health planning in terms of setting goals, implementation, monitoring and evaluation is expected to lead to a minimisation of medicine use. This work package will focus on evaluating medicine use and the health and welfare status in case study herds.

Summary of the first workshop

Overview of the workshop

The primary aim of the first workshop was to develop firm working plans and to finding a common collaborative platform amongst the project participants. Presentations were aimed at creating a common understanding of the focus areas in the four research work packages and their relationship to each other and the main project objectives. These were supplemented with group work sessions and discussions. An invited speaker presented perspectives on animal health plans and animal health planning in the UK as part of Work Package 2. All participants presented details of national research and development projects relevant to the project aims and objectives and appropriate for linkages with the proposed project research activities. The workshop also involved a farm visit where some of the key principles and issues associated with animal-based welfare assessments were demonstrated by participants who were currently involved in research projects utilising this approach.

National projects and project activities supporting ANIPLAN

The national project activities are listed in Table 1.

Country	National projects and research activities related to the focus areas of ANIPLAN
Denmark	<ul style="list-style-type: none"> - Development of animal health advisory service. 1999-2002. - Phasing out of antibiotics in Danish organic dairy herds. 2004-2007. - ECOVIT. Sharing a Ph.D.student with ANIPLAN. 2007-2010. http://www.ecovit.elr.dk (in Danish)
Germany	<ul style="list-style-type: none"> - Animal health situation in organic dairy farming - mastitis, lameness, metabolic disorders (02 OE 612). 2002-2004. www.bundesprogramm-oekolandbau.de/index.php?id=186&fkz=02OE612&pos=276 - Animal health in the food chain management in organic dairy farming - an intervention study on lameness (03 OE 406). 2004-2007. www.bundesprogramm-oekolandbau.de/index.php?id=186&fkz=03OE406&pos=281 - Animal health in the food chain management in organic dairy farming – a pilot-study on implementation of herd health plans (03 OE 406 +). 2006-2008. www.bundesprogramm-oekolandbau.de/index.php?id=186&fkz=03OE406&pos=281 - Minimising medicine use in organic dairy herds through animal health and welfare planning (CoreOrganic 1903/07 OE 003). 2007-2010. www.bundesprogramm-oekolandbau.de/index.php?id=186&fkz=07OE003&pos=271 - Health and performance of dairy cows in organic farming - an (intervention-) study on metabolic disorders and mastitis with regard to forage production, feeding management and husbandry practices (07 OE 013). 2007-2010. www.bundesprogramm-oekolandbau.de/index.php?id=186&fkz=07OE013&pos=258
Austria	<ul style="list-style-type: none"> - WelfareQuality. Development of animal based parameters in Austria as well as other EU countries. 2004-2009. http://www.welfarequality.net/everyone - Epidemiology of lameness in dairy cattle (also a part of WelfareQuality). - Implementation of health and welfare plans in organic pig farming. Federal Ministry of Agriculture. 2004-2009. https://forschung.boku.ac.at/fis/suche.projekte_uebersicht?sprache_in=en&projekt_id_in=6669 - CORE-Organic Pig: Prevention of selected diseases and parasites in sow herds by means of a HACCP based management and surveillance program. 2007-2010. http://www.corepig.coreportal.org - Welfare assessment with focus on human-animal relationship. University of Veterinary Medicine in Vienna. - Ruminant Health in Organic Agriculture. 2005-2007; extended to 2008. http://www.fibl.org/fibl/team/stoeger-elisabeth.php
Switzerland	<ul style="list-style-type: none"> - ProQ. Regional research and development project involving more than 200 farms. 2003-2010. http://www.fibl.org/forschung/tiergesundheit/komplementaermedizin/pro-q.php. In English: http://www.fibl.org/english/research/animal-health/health.php
Norway	<ul style="list-style-type: none"> - Housing of calves in large groups. Norwegian Agricultural University. 2005-2008. (no homepage) - Loose housing systems for cattle. 2006-2010. http://www.kubygg.no - Health in calves and young stock. 2004-2008. http://storfehelse.tine.no - Stockmanship and the human-animal relationship: Its effect on the health and welfare of dairy calves and young stock. 2006-2008. (no homepage) - Organic Cow Comfort. 2003-2005. (http://ask.bibsys.no/ask/action/show?pid=p07000511&kid=forskpro) - Farm building in the Arctic. 3 studies focused on welfare in cold housing. 2004-2005. http://www.fylkesmannen.no/hoved.aspx?m=22544
The Netherlands	<ul style="list-style-type: none"> - Antibiotic free animal production. Includes in vitro testing of herbs. 2007 http://www.biokennis.nl/ (choose "Kennisbank") - Animal welfare of organic dairy cows. Developed in collaboration with dairy company that has implemented welfare protocol. 2008. http://www.verantwoordeveehouderij.nl/Producten/Netwerken2007/13/CowCoach.pdf. - Resistance of organic dairy cows. 2007. http://www.biokennis.nl/ - Minimizing antibiotics on 8 dairy farms. 2007. ASG-report 49. http://www.asg.wur.nl/UK/ - Vision of organic farms about animal health and welfare. ASG Report 55 2007. http://www.asg.wur.nl/UK/

United Kingdom	<ul style="list-style-type: none"> - Bristol Welfare Assurance Programme http://www.vetschool.bris.ac.uk/animalwelfare - Funded by Defra: - Incorporation of conventional animal welfare assessment techniques into organic certification and farming - Compendium of Animal Health and Welfare in Organic Farming (www.organicvet.co.uk) - Welfare benchmarking and herd health plans on organic dairy farms - The welfare of dairy cows on organic milk production systems
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Table 1. A list of previous and current research and development projects relevant to ANIPLAN.

The common platform of ANIPLAN

The common starting point of the participating institutions and researchers

The ANIPLAN project aims at minimising medicine use in organic dairy farming through animal health and welfare promotion. This requires an on-farm approach, and a strong collaboration with end-users. In this regard, the following points characterises the participating institutions/individual researchers:

- Strong on-farm research and development experience on private farms;
- Epidemiological research based on farm-data, qualitative research approaches and systemic thinking;
- A common understanding of the complexity of a farm, the need to focus at the individual farm level and an understanding of the diversity between farms;
- An organic farming research focus and an understanding of the wide diversity in the understanding of the organic farming concept;
- Understanding of the importance of close contact with end-users and stakeholders (farmers, farmer groups and organisations).
- Understanding that the basic research approach will action-research oriented.

Recognising the challenge and advantage of diversity

In this project, very different farming conditions are represented – e.g. from mono-cultural intensive and high yield production in Danish, Dutch, German and British farms to alpine farming in Austria and Switzerland, and mountain farming in Norway. This requires the development of concepts that enable some commonality with regard to the research approach and the organic principles whilst also recognising the requirement to adjust to national, regional and local conditions. Each project participant will be responsible for creating the connection between national and regional organic dairy farming environments and the overall project aims and activities. This application across diverse conditions should be seen as advantageous with regard to the project outcome and lessons, since the commonly developed principles and outputs will be robustly tested across different conditions, with the necessary adaptations incorporated.

Linking the work packages

All research work packages are – as indicated in Figure 1 above – strongly interlinked. During the course of the first workshop it became apparent that work packages 2, 3 and 4 are also internally linked, since they need to develop through an iterative process, whereby the activities in each of the packages are adjusted to each other. This raises important and challenging issues regarding the collaboration between institutions, which all have their different strengths and responsibilities. This was a particularly strong focus of discussion at the workshop.

Synergy and added value to national projects

Much of the ANIPLAN project is based on the presumption and desire to link with national on-going activities, and is designed to transfer, jointly analyse and discuss the results in the context of the ANIPLAN objectives and those of individual projects. Adopting such an approach, whereby the methodology and interpretation are adaptable, provides a framework from which other research group and countries benefit from the joint analysis and adaptation to diverse conditions. It is the intention that national teams feed the acquired knowledge back to their national partners, and the European (and international) community benefit from the joint effort to develop practices which meet core areas of organic livestock production (animal health and welfare through a non-medical and positive health approach).

The use of animal-based health and welfare parameters – what is it all about?

Christoph Winckler

Introduction

Organic farming is characterized by several goals that are expressed in daily practices and in standards. Some of the important goals for organic production systems are naturalness, harmony on all levels of production, local recycling of resources, and the principle of precaution (Anonymous, 2002). For organic herds, good animal welfare is an explicit goal, and this includes that the overall goal for the organic farming systems regarding naturalness and harmony in the herd are met by giving the animals possibilities to perform natural behavior and achieve harmony within the group. Freedom for the animals to make as many choices as possible should be respected (Vaarst et al., 2004; Verhoog et al., 2002 & 2004). The production system is not sustainable if animals show evidence of pain, disease, or distress as a result of an inadequate system or disharmony between the animals and the system. Therefore it is of crucial importance to be able to assess and evaluate the animals' response to the system.

This need is not only relevant for organic systems. Public concern about farm animal welfare has steadily grown during recent years. In this context, welfare assessment has many roles such as identifying current welfare problems, checking farm assurance and legislative requirements have been met, indicating risk factors leading to a welfare problem, testing the efficacy of interventions, formulating a product information/labelling system, or research tool for evaluating and comparing production systems, environments, management systems, animal genotype etc. (Whay, 2007).

Improvements in animal welfare may be achieved through (1) assessment of animal welfare, (2) identification of risk factors potentially leading to welfare problems and (3), interventions in response to the risk factors. In order to see whether the improvements have worked, it is furthermore important to be able to measure or assess the improvements and see if it has worked. In this process the animal based parameters help us to identify the animal's response to the system, and therefore also the potential problems in this system.

It is the aim of this presentation to give an overview over concepts of welfare assessments, and animal based parameters, and present the ideas in the project Welfare Quality in order to create a background for understanding and discussing the use of animal based parameters in the current ANIPLAN project.

The rationale of on-farm welfare assessment

Operational on-farm welfare assessment tools must involve measures that at the same time are

- 1) valid and reliable,
- 2) easily operated by trained people, and require limited time.

Animal welfare refers to the state of an animal and it relates to the animal's feelings as well as to its bodily state (e.g. Broom, 1996, Duncan, 1996). Traditionally, farm animal welfare assessment has focused on the measurement of resources provided to the animal such as housing and design criteria (Bartussek, 2001, Bracke et al., 2002). The use of such indirect resource-based criteria (figure I) is attractive because their measurement is mostly quick, easy and reliable. Other husbandry aspects that affect animal welfare are management practices and the human-animal relationship; their measurement is often less easy. However, the provision of good management and environmental resources does not necessarily result in a high standard of welfare. As shown in figure I, direct animal-related parameters such as health or behaviour can be taken as indicators of the animals' feelings and as measures of the bodily state. Welfare assessment should therefore primarily be based on such animal-related parameters. It is however challenging, to select and develop reliable and at the same time feasible measures for on-farm assessment protocols; this will be further discussed below. In practice, resource or management-based parameters may also be included in on-farm assessment protocols when they are closely correlated to animal-related measures and because they can form the basis for the identification of causes of welfare problems.

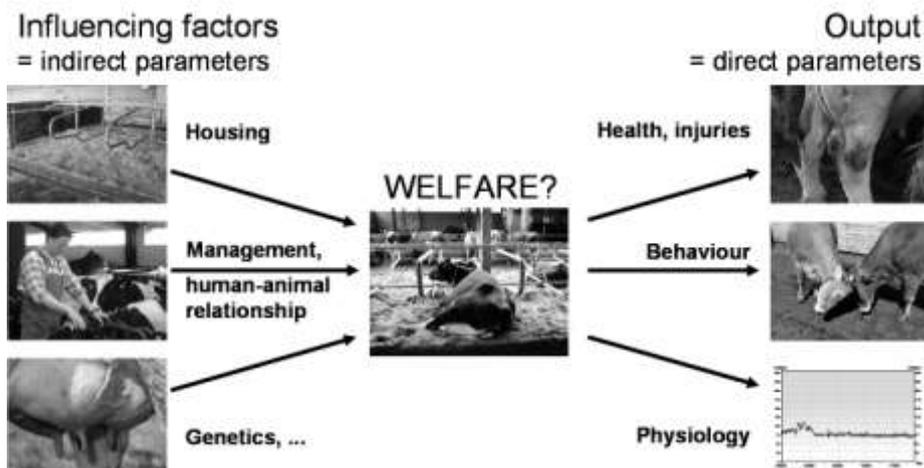


Figure 1: Influencing factors and animal-based parameters in relation to the animal's welfare state

Attempts to create an operational welfare assessment protocol primarily relying on animal-related parameters have mainly been made with regard to dairy cows (e.g. Capdeville & Veissier, 2001, Main et al., 2003, Whay et al., 2003a, Whay et al., 2003b). However, considerable efforts are currently made in further developing valid, reliable and feasible systems for several cattle categories.

Validity and reliability of selected animal-related parameters in cattle

Types and features of indicators

Animal-based measures for on-farm welfare assessment can be roughly divided into behaviour and pathological parameters; physiological indicators are mostly not available for feasibility reasons. In Box 1 below, a list is given over some concrete parameters, which can be relevant and are often used for animal welfare assessment.

Pathological parameters	Lameness	Injuries
	Disease incidence	Body condition
		Cleanliness
Ethological parameters		Behaviour around resting
		Agonistic social behaviour
		Abnormal behaviours
		Animal-human relationship
'Other parameters'		Positive indicators
		Integrity of the animal

Box 1. Examples of different types of animal based parameters each giving an aspect of the animal's condition and state of well being.

All the parameters chosen should give the best possible estimate of the welfare state within the herd, and therefore certain key characteristics need to be fulfilled. Below in Box 2, three relevant requirements are listed. Besides the overall validity of the measures, i.e. what information they provide about the animal's welfare state, the robustness of the measures with regard to e.g. inter-observer reliability or feasibility will be shortly discussed in the following sections.

- Validity:
'What does this parameter tell us about the animal's welfare state?'
- Reliability
e.g. inter-observer reliability: do different observers see the same thing?
- Feasibility
The practical aspects of doing the recordings, e.g. how easy is it to record, how long time does it take, which equipment is needed?

Box 2. A list of factors that one needs to consider when planning animal welfare assessment including animal based parameters. To make a good basis for taking decisions about improvements in the herd, the parameters should be strong both in validity, reliability and feasibility.

Animal behaviour disturbances

Disturbances of the behaviour around resting may be associated with insufficient recuperation, frustration, reduced rumination, increased risk for lameness and alterations or injuries regarding hair, skin and joints. The assessment of time budgets such as total duration of lying is not suitable for short-term monitoring systems. However, parameters related to lying down or rising (time needed, frequencies of abnormal, altered or impaired movements) and lying and standing in the cubicles can be quantitatively or qualitatively recorded also during shorter periods using continuous behaviour sampling and/or scan sampling (e.g. Cow Comfort Index; Cook et al., 2004).

In horned cows, the frequency of agonistic social behaviour elements is positively correlated with the occurrence of skin injuries (Menke et al., 1999) and it is likely that also in dehorned cows aggressive interactions result in less obvious lesions such as hematomas. Although already suggested for (Whay et al., 2003a) or applied in on-farm welfare assessment protocols (Capdeville & Veissier, 2001), relatively little is known about the minimum duration or the time frame of observations in order to get a representative picture of a given farm. Pilot studies in dairy herds have shown that agonistic interactions can be reliably recorded during the first hours after feeding showing the highest inter-day repeatability for this period of the day. However, short-term recordings of social behaviour should be restricted to interactions involving physical contact (Winckler et al., 2002).

Abnormal behaviours can be distinguished in redirected behaviours and stereotypies. In cattle, mainly abnormal oral behaviours such as tongue playing/tongue rolling, sucking at objects or cross-sucking have been described (Scientific Veterinary Committee, 1995). These behaviours occur to a different extent in calves, heifers, dairy cows and fattening cattle. Due to the low incidence, continuous behaviour sampling has to be applied for recording, which reduces feasibility. However due to the fact that the behaviours are linked with oral behaviour and the motivation to feed or suck, it may be possible to check these behaviours during specific periods for example after feeding.

Lameness indicates a painful state and discomfort and is regarded as one of the most serious welfare problems in cattle. It is listed under behaviour related parameters and can be linked to disturbances in the cows' laying down behaviour, but is also clearly linked to animal diseases in terms of claw diseases, and as such, the condition leads to severely changed behaviour in the cow. Whereas the examination of the claws provides detailed information on pathological findings, this procedure is not applicable for routine on-farm assessments. There is a variety of feasible lameness scoring systems which basically rely on gait recording. In general, each animal is assigned a score on a 4 (Breuer et al., 2000) to 9 point scale (Manson & Leaver, 1988) according to gait-related behaviour patterns such as short-striding, difficulty to put weight on limb or difficulty in turning when walking on a hard floor. Locomotion scoring systems revealed significant correlations with claw lesion scores (Winckler & Willen, 2001) or other behavioural measures such as speed, tracking and head position (O'Callaghan et al., 2002). Training and practical experience is important to reach satisfactory inter-observer repeatability (Engel et al., 2003, March et al., in press).

Animal health and disease

Other diseases such as mastitis or metabolic disorders are undoubtedly welfare relevant, and will require sophisticated diagnostic effort or long-term data recordings in order to estimate their exact prevalence. Farm records often suffer from insufficient book keeping, mistakes in data collection and transfer or lack of treatment of sick animals. Therefore reliable informations seem to be difficult to obtain in many cases.

Nevertheless, since disease parameters are so important the possibility to use (standardized) farm records should be ensured.

In (dairy) cattle, both undernutrition and overnutrition can be regarded as a (potential) welfare problem, since cows which are overconditioned at drying off are more likely to develop cystic ovarian disease and lameness. Severe body condition loss from the dry to near calving period increased the occurrence of retained placenta. In addition, too thin animals may be regarded as welfare relevant per se, since they have obviously not been able to meet their physiological demands and may suffer from prolonged hunger. Body condition scoring (BCS) can be performed using a variety of scales and systems. Inter- and intra-observer reliability has been evaluated for a number of systems (e.g. Ferguson et al., 1994).

Soiled skin and hair may induce itching, reduce skin function with regard to thermoregulatory properties and anti-germal defence and may cause inflammations of the skin. Relationships with mastitis incidence have also been postulated (Valde et al., 1997). Faye & Barnouin (1985) developed a cleanliness index for dairy cattle using a five-point scale in five body areas. Since only from severe soiling (thick >1cm and cohesive soiling) negative effects are to be expected, recording may focus on these two scores.

Skin lesions, injuries and swellings reflect the impact of the surrounding environment on the animal's body (Ekesbo, 1984). Alterations result for example from contact with hard floors, pressure against feed racks or hits against cubicle partitions. The main body areas at risk are the carpal, fetlock, hock and stifle joint, neck/withers, shoulderblade, dewlap, hip and ischial tuberosity. Likewise, infestation with ectoparasites leads to pruritus, pain and reduced welfare depending on the causative organism. Existing scoring systems refer to the different body areas, severity (hairless spots, scabs, wounds) and size of the lesions and swellings, respectively (e.g. Wechsler et al., 2000).

Surgical treatments such as dehorning, tail docking or castration are welfare relevant for various reasons. They cause pain during and after the procedures, may result in reduced function (e.g. increased fly numbers in tail-docked cattle; Eicher et al., 2002) and impair the animal's integrity in general. The percentage of affected animals, time and type of procedure can be used as parameters.

Animal-human relationship

The animal's relationship to humans has been shown to have a significant impact on animal health, production and welfare. Approach and avoidance reactions can be used to assess the animal-human relationship in loose housed dairy cows (e.g. Waiblinger et al., 2003). The avoidance distance towards an unknown person in the home environment (e.g. barn/pen) correlated significantly with the milker's behaviour (Waiblinger et al., 2002). However, the reliable assessment of avoidance distance requires a relatively large sample size and thus appears to be less feasible. In tied dairy cattle, measures of animal-human relationship have only been developed in experimental research but there is no experience with on-farm recordings.

Potentials for qualitative and positive animal welfare assessment

Whereas most approaches to welfare assessment are based on indicators of reduced welfare, it seems to be promising to put more emphasis on indicators of good welfare in future. Environmental control and positive social relations may be considered as main components of good welfare. It has often been suggested to use social and non-social play as an indicator of a good welfare state since young animals in particular are only motivated to play if their primary needs are satisfied (Lawrence, 1987). In calves, play is mainly expressed as locomotor and social activities as well as activities directed towards the environment. However, playing is only rarely observed in adult animals and therefore probably restricted to an indicator in calves. In adult cattle, affiliative behaviour such as social licking appears to be a promising indicator of long-term positive affective states. Beneficial effects may be expected in terms of reinforcing and stabilising social relationships and because of the rewarding function at least for the receiver (Sato, 1984, Sato et al., 1991).

In addition to quantitative parameters, the qualitative assessment of cattle behaviour for animal welfare assessment purposes has been discussed in recent years (Wemelsfelder et al., 2001). This approach focusses on the judgement of 'body language' and might be helpful to detect states such as 'apathy' or positive affective states which are commonly considered as welfare relevant.

Towards feasible assessment systems: The EU project Welfare Quality

The decision which parameters and measures are finally included in on-farm welfare assessment protocols depends on various factors such as the purpose, the time available for data recording and the skills and

knowledge of the assessors. Up to now, only few monitoring schemes for dairy cattle have been suggested and applied in the on-farm context (e.g. Capdeville & Veissier, 2001, Whay et al., 2003); there are no systems available for other cattle categories such as dairy or veal calves, dairy heifers or beef cattle.

Areas of concern	Criteria referring to 'what characterises good animal welfare?'	Measures
Good feeding	Absence of prolonged hunger	BCS
	Absence of prolonged thirst	<i>Water supply</i>
Good housing	Comfort around resting	Cleanliness, time needed to lie down...
	Ease of movement	<i>Tethering</i>
Good health	Absence of injuries	Lameness, integument alterations
	Absence of diseases	Clinical examination, herd records
	Absence of pain induced by management procedures	<i>Dehorning, tail docking</i>
Appropriate behaviour	Expression of social behaviours	Frequency of agonistic behaviours
	Expression of other behaviours	Qualitative behaviour assessment
	Good human-animal relationship	Avoidance distance barn/feed rack
	Absence of general fear	?

Table 1. In the European project Welfare Quality, measures for good animal welfare are chosen partly on basis of considerations of how they refer to the criteria and characteristics of good animal welfare, e.g. the five freedoms.

It is one of the goals of the EU project Welfare Quality (www.welfarequality.net) to develop feasible monitoring systems to assess the welfare of cattle, pigs and chickens. 12 areas of concern such as 'absence of injuries' or 'expression of social behaviours' have been identified, that should be covered in the assessment of welfare. At present, numerous potential measures are being evaluated or newly developed with regard to validity, reliability and feasibility. A full monitoring scheme is expected to be tested in practice on commercial farms (dairy, veal, beef cattle) in several EU countries in 2007. The main objectives of the final monitoring system are to give advice back to the farmer and/or the veterinarian and to inform consumers about the welfare status of the animals from which they buy products. This project also addresses in a comprehensive way the integration of information by means of a multicriteria evaluation of animal welfare.

Conclusions and future perspectives: on-farm welfare assessment in relation to herd health and welfare planning

On-farm welfare assessment is a necessary tool in order to identify challenges for the animal health and welfare in the organic dairy herd. It will give guidelines to relevant improvements and make it possible to evaluate the improvements later in order to estimate whether they have been successful. Welfare assessment systems therefore play a relevant and indispensable part of herd health and welfare plans in the future.

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Animal Health Planning and Animal Health Plans - Concepts, principles and practicalities

Chris Atkinson & Madeleine Neale

Introduction: What is an animal health plan, and why have one?

In the United Kingdom it is mandatory for organic livestock farms to have an animal health plan as a document providing evidence of active management of disease and building positive health (Anon 2006). Many organisations, both organic and non organic, (e.g. BCVA, Defra Compendium of UK Organic Standards, Soil Association, RSPCA Freedom Food, NDFAS, FAWL) develop, describe and use animal health planning as a part of their strategy (see Box 1). Currently, it is the presence of a regularly updated health plan document that serves as evidence that this is in place.

The benefits of health plans, including animal welfare improvement, financial gain and increased farm efficacy have all been highlighted in various publications (Sibley 2000, Gray & Hovi 2001, Dobbs 2005, Lovatt 2004). It has frequently been suggested that, through good stockmanship and appropriate use of veterinary medicinal products, health planning can improve the smooth running of a farm.

An animal health plan should be an active tool for animal health and welfare planning. However, as organic certification and several farm assurance schemes require a health plan there is a danger that they become seen as something to be policed when in fact they should be used as a forum for advice. In order to fulfil this challenge a health plan must therefore be farm specific and relate to farm specific issues.

The stock-keeper should draw up a written health and welfare plan with the herd's veterinary surgeon and, where necessary, other technical advisors which should be reviewed and updated each year.....

Paragraph 7 Codes of Recommendations for the welfare of livestock: Cattle (Anon 2003)

- 10.3.1 - You must develop and agree with us a plan that addresses how you will meet the standards in each of the following areas.....
- 10.3.2 - You must review your livestock management plan regularly and keep it up to date.
- 10.3.3 - As part of your LMP you must draw up a health plan to show how you will build health and reduce disease. This must suit your own farm

Soil Association, Organic Standards (Anon 2007)

The Farm Animal Welfare Council (FAWC) recommend that herd/flock health planning on organic farms should include a disease risk assessment for all classes of animals depending on the past history of the farm as well as disease incidence on neighbouring farms. These plans should be equivalent to the herd/flock health and welfare plans widely advocated in conventional livestock farming and should include an agreed programme to achieve full compliance with the target animal health and welfare standards.

FAWC 2005

Box 1. UK Welfare codes, UK Soil Association organic standards and FAWC recommendations

The animal health plan as individual farm management tool

An animal health plan needs to be a useful management tool that can identify and control the particular health problems of the individual farm, thus improving and maintaining animal welfare. This should be based on farm specific experiences and problems, as all farms are likely to be different. Based on literature on the implementation of the organic standards, consensus seems to exist that the organic standards form a very good background for giving the organic animals high standards of good health and welfare, but clearly the standards cannot guarantee or cover all issues and conditions on a farm (Main *et al.*, 2003, Roderick *et al.*, 2000, Sundrum and Lund 2003). An animal health and welfare plan can aid in this respect.

Key features of animal health plans

If animal health plans are to be of value to a farmer, then the following key features are proposed as essential elements:

- Specific to individual farm

- Practical and easy to use
 - Modern day farming has given rise to a lot of paperwork.
 - The health plan should be simple and practical
 - Large and complex documents are unlikely to be used.
- Regularly reviewed and updated
 - Should highlight problem areas
 - Specific farm issues are likely to change over time.
 - Current procedures should be changed in accordance with changing issues
 - Usual practices can be questioned and evaluated
- Formulated with agreed advice
 - It is very difficult to review health management issues in isolation
 - Competent, external advice is, therefore, important
 - Health plans remain responsibility of farmer
 - Farmers must agree to the content for it to be a meaningful document
- Reflect good farm management

Key stages of health planning

Health planning is the process in which a health plan is formulated, and it can be described as having four different stages:

- Protocols (current treatment and prevention policy)
- Records (typically disease incidence or number of treatments)
- Review (target and intervention levels)
- Action: the plan that is made based on the review.

Assessing animal health plans

Within a certification system a health plan should be assessed in terms of;

- its presence on a farm
- its adequacy in relation to the farm for which it is designed
- its adequacy in relation to organic standards
- its implementation on the farm.

Organic certification officers currently examine new animal health plans, and inspectors check the presence of plans on the farm. However, the implementation and adequacy of a health plan on an individual farm must be included, ideally without additional work burden. In order to facilitate this process, a health plan chart has been formulated, which is designed to allow the certification and inspection process to work together to enable presence, implementation and adequacy all to be annually checked without additional work load (Box 2 below). It is proposed that this will be completed by certification officers and sent to the inspector prior to inspection. The inspector will then edit/delete/add relevant details during inspection, and send it back to certification officer for recording. Any derogations/informed changes would be added throughout the year.

The proposed health plan chart is easy to overview, allows the content to be discussed with the farmer and encourages regular health plan updating.

Farm		Date
biosecurity		Yes/No/Comments
	isolation	
	incoming animals	
	closed herd	
	Other	
	NOT MENTIONED	
Internal parasites - gastro		
	pasture/species rotation/management	
	FEC	
	veterinary advice	
	Other	
	NOT MENTIONED	
Internal parasites - lung worm		
	species/pasture rotation/management	
	FLC	
	Medication	
	Vaccination	
	Other	
	NOT MENTIONED	

Box 2. A section of the animal health plan chart, which is used in the certification and inspection of the organic farm.

Summary: Animal health and welfare plans AND planning

In summary, an animal health plan aims at contributing to improvements on the farm and in the herd through active prevention and monitoring of health and welfare, and to find farm specific solutions to farm specific problem. However, at present the situation (as described variously by Burke 2005, Huxley 2005, Bell *et al.*, 2006) appears to be the following:

- Most farms have plans but often **not valued**
- Records are available but often **poor accuracy**
- Reviewing of plan or records is very **limited**
- Farmers **not aware** of problems
- There is a definite **need for good advice**

In order for an animal health plan to be effective it must become a dynamic document to be used as a tool in the management of the farm. As simply a static archived document, developed for a farm assurance scheme, the health plan has limited use. Ideally, a health plan should involve the use of protocols and records, along with regular review and necessary actions. After action has been taken, follow-up should be conducted in order to determine whether the action is sufficient and seen to improve the farm situation. This should become a constant circle resulting in improving health and welfare. Whilst health plan development can benefit from competent external advice it is paramount that the farmer takes ownership of this process. To be meaningful, it is important that the farmer takes responsibility for the health plan and that there is full agreement with the content. As the animal, the farmer, the vet/advisor and the consumer all require higher welfare, the health plan should be benefiting all of these stakeholders. If it does not, then it is ineffective.

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Animal Health and Welfare Planning - Identifying key principles and approaches

Pip Nicholas, Steve Roderick & Mette Vaarst

Background

During the presentations and discussions at the 1st ANIPLAN workshop it became apparent that there are many different approaches to disease prevention and treatment planning. These exist in a variety of structured forms, and also involve different approaches to the dialogue between farmer and advisor. The distinction between 'an animal health plan' and 'animal health planning' has also become evident (see Atkinson & Neale, 2008 in these proceedings). Whereas a plan refers to documentation, planning is understood as a process which actively involves the farmer, is based on an assessment and evaluation of a real situation and includes an explicit formulation of the farmer's goals regarding animal health and welfare.

In order to develop a single yet adaptable approach to health planning that can be tested under diverse conditions, there is a necessity to identify key principles. This report describes workshop discussions and the consensus reached with regard to the identification of such principles.

Workshop Approach

A half workshop day was dedicated to group discussions on the development of principles for animal health and welfare planning across countries. This was undertaken in a semi-structured manner following the format described in Figure 1 below. The groups were formed so as many nationalities as possible were presented in each group. A general discussion between all participants was conducted in order to form consensus on these principles.

Task

Brain storming session

Topic: Animal health and welfare planning

Structured Discussion

- What do you see as the role of health and welfare planning?
- From what we heard this morning, what are the key themes running through existing health and welfare plans?
- What extra, if anything, is required in an organic animal health and welfare plan?

Key principles

- Each participant to define 2 key principles that they think should be in an AH&W plan
- Write on card and place on pin board

Key principles discussion

- Critically discuss principles proposed
- Consolidate any principles that are the same (re-write on new card if necessary)
- Identify any conflicts or contradictions between principles

Plenary

- Working groups to present their principles to plenary group for discussion
- Group to reach consensus on the key principles to take forward (maximum of 10 principles)

Figure 1. Plan for discussion groups on identifying key principles for animal health and welfare planning.

Results

There was strong consensus in the plenary session before the group work that animal health and welfare planning is a process which should be continuous and based on data and observation in the herd, and the

effect of every improvement should be evaluated, as illustrated in Figure 2. This enabled a strong focus on the animal health and welfare planning process rather than what an animal health and welfare plan should contain.

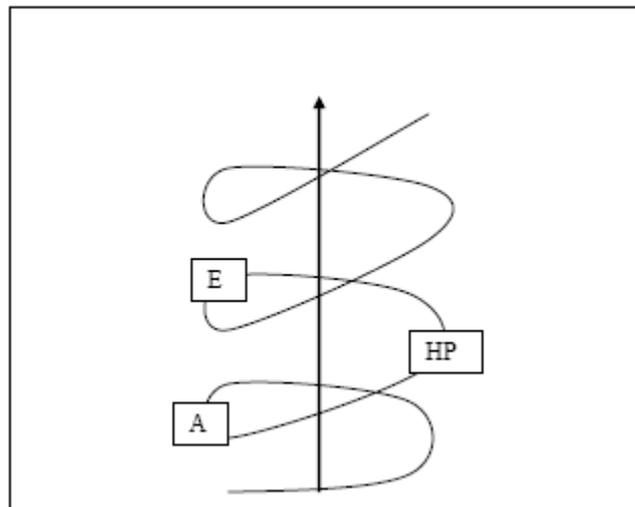


Figure 2. Representation of animal health and welfare planning as a continuous process based on assessment (A), planning (HP) and evaluation (E).

Key principles of health and welfare planning

Eight key principles of animal health and welfare planning were identified and are described in Figure 3.

- A health planning process should aim at continuous development and improvement, and should incorporate health promotion and disease handling, based on a strategy including
 - o current status + risks (animal based + resource based parameters)
 - o evaluation
 - o action
 - o review
- Farm specific
- Farmer ownership
- External person(s) should be involved
- External knowledge
- Organic principles framework (systems approach)
- Written
- Acknowledge good aspects

Figure 3 Eight principles of the animal health planning process that the AniPlan project will be based on, compiled as an output from group discussion and elaborated upon below.

The role of animal health and welfare plans

Animal health and welfare planning should be a continuous process aiming for constant improvement. Animal health and welfare plans should raise the awareness of farmers and stimulate them to continuous development and improvements in farm animal health and welfare. They should also act as tools for farmers, so that the ideas and targets of the farmer are made explicit and the organic production methods are integrated in the daily practice of the farm. Animal health plans exist in various forms but can often be ineffective at delivering effective health planning.

The process of planning involves knowledge, documentation, setting targets and follow-up

The most important characteristics of animal health and welfare planning is to see it as a process where the areas in focus are carefully monitored (so that the changes can be well-documented when following up) and the farmer’s plans for improvements are based on farm-specific knowledge. Record keeping and monitoring and surveillance should therefore be important elements of the plan. When setting targets, a way of measuring whether these targets are reached or not should also be identified. There should be a review process, and in situations where targets are not met, new plans should be made and implemented in the

process. The plan and review process should be sufficiently flexible and adaptable to changing conditions, opinions and perceptions.

Farm specific and based on knowledge about the herd in focus

The process of animal health and welfare planning is based on assessment, planning and evaluation. The assessment and evaluation comprise farm specific and real data as well as systematic observations in the herd. Plans should always be based on actual knowledge of the current health status of the herd and use estimates of disease status and welfare, including epidemiological monitoring and welfare outputs. The plans should also be farm specific in the sense that the wishes, needs and priorities should be guided by the farmer and responsible persons on that farm. *Note that based on information from the participating countries in this project, we conclude that there are huge differences in the type and quality of the records between countries.*

The farmer must have ownership over the plan and planning

The farmer's perception/opinion/knowledge of the current problems in the herd has to guide the process, because if the farmer does not see a problem, then the health planning process is unlikely to be implemented effectively. Farmer discussion groups, Stable Schools or similar might be a means of assisting the farmer to identify health problems.

An external person must be involved

Although the farmer has to be the driving force in the process, external advice (e.g. veterinarian, advisor or other farmers) offers an objective view which may improve the process, particularly with regard to identification of problems and solutions as well as providing inspiration.

Organic elements

Making a plan based on specific farm knowledge and specific recommendations for improvements is relevant for health planning in both organic and non-organic herds. However, given the explicit goals for organic herds of good animal health and welfare, based on disease prevention and health promotion, there may be a need for a different emphasis to organic health plans.

From the onset, organic principles and legislation provide an initial framework for guidance. It may be argued that thresholds for evaluating health and welfare status should be higher in organic farming systems, particularly with regard to welfare targets as high welfare is a stated aspiration and consumers expect high standards of welfare. An organic plan needs to have a very definite preventive and health promoting focus, as well as a focus on naturalness in terms of allowing maximum natural behaviour and species-specific conditions, including feeding and other management elements. It was emphasised in the discussion that the holistic whole-farm view should be included in the health planning process so as to account for the integrated nature of organic animal production, the inter-relationship between various farm elements and the multiple objectives of organic farming.

Acknowledge good aspects

It was agreed that the success cases and positive developments in a herd or a farm should also be systematically evaluated. This will be something to learn from, and an appropriate 'closure of a case' which the farmer and perhaps others have been working on for a longer period. These good stories are believed to be motivating for everybody, and focus, therefore will not only be on problem areas.

Future perspectives

Consensus on basic principles for an animal health and welfare plan was reached between participants from seven different European countries, and these principles will be included in the research initiatives in the participating countries during the course of the project. The approach to the implementation of these principles in practice is an objective of the project and the success in achieving this will be evaluated as an output. These will use empirical data and qualitative approaches. The final principles emerging from this process of discussion, testing and evaluating will be formulated as recommendations for the development of animal health planning in the future.

Communication in animal health and welfare planning.

Mette Vaarst, Michael Walkenhorst and Gidi Smolders

Introduction

The project 'Minimising medicine use in organic dairy herds through animal health and welfare promotion' is focused on animal welfare assessment and its role in the active use of animal health plans in order to improve animal health and welfare on organic farms. To be active, a health plan requires dialogue between the farmer and those who are able to view the farm from the outside e.g. vets and advisors. The importance of this communication is the focus of this paper.

Across Europe we see highly diverse farming systems and similarly diversity in advisory systems and their approaches to communicating with farmers. One of the objectives of the AniPlan project is to develop approaches to health planning that are robust yet sufficiently adaptable to be applied across these various conditions. This will involve utilising knowledge of current approaches to communication between farmer and advisor, but also the opportunity for new ways of communication that contribute to the process of animal health and welfare promotion. Relevance to the farmer is paramount.

In this paper, three current approaches are summarised, focusing on the dialogue between farmer and 'external persons'. These are the Danish Stable Schools, the Dutch farmer study groups (where farmers participate in doing animal welfare assessment in a fellow-farmer's herd) and the Swiss pro-Q project, where there is a very active dialogue between advisors and farmers in a continuous feed-back system. Further to these descriptions, the paper summarises the results of discussions between participants at the first AniPlan workshop in Helleved, Denmark on the subject of communication in the animal health planning process.

The Danish Stable Schools

The concept of Stable Schools

The Farmer Stable School concept developed when a large group of Danish organic dairy farmers faced a situation of having a common goal to phase out antibiotics from their herds. This was a complex goal which could be reached in several ways, but with very little experience of how best to achieve this through participatory means in a Danish context. In order to establish a good common learning environment the concept of Farmer Field Schools (FFS) was adjusted to Danish organic farmer conditions. Farmer Field Schools (FFS) is a concept for farmers' learning and empowerment through knowledge and experience exchange. The concept was developed and used in Indonesia as a sustainable way of learning and developing farming for small-scale rice farmers. This learning approach, which is based on innovative, participatory and interactive learning, has been adopted in many 'developing country' situations (Gallagher, 1999).

In the Danish project, ideas were built from experiential learning and action research. In Denmark, the so-called 'Farmer Experience Exchange Groups' have been used for decades. These are often groups of 10-15 farmers from similar farms (e.g. dairy farms with a certain housing system and/or breed), which meet on regular basis on each others private farms. The group would normally be run by an agricultural advisor, who acts as a form of coordinator and professional expert in the field. Often, an external specialist expert (e.g. in farm economy, buildings, feeding etc.) will be invited and give a lesson on a certain topic. This approach is very different from the FFS in that it involves one or more 'experts', and because it focuses on a topic rather than the specific farm and identification of potential areas for improvement.

The results from the Danish experience of Stable Schools show that crucial changes took place during the project period and these successes can be partly attributed to the farmers' ownership over the common goal and the advice from the group based on the articulated goals for each participating farm. The farmers' change process towards a common goal may be viewed as an equal common learning process.

The Stable School meetings and the role of the facilitator

All meetings took place on a farm, and all 5-6 farms involved in a group were visited in turn. Meetings were organised by the facilitator and host farmer approximately 2 weeks before a meeting took place and the agenda for the proposed meeting was discussed at this time. This agenda was then circulated to other

participating farmers. One success story and two perceived problem areas were identified by the host farmer as a focus for the meeting. Key data from the herd (from the Danish central cattle data base) were also sent to participants as preparatory material and in order to provide an insight to the herd in focus. Group meetings typically involved ½-1 hours farm walk with free discussions followed by an indoor 'round-table' session of 1½-2 hours. Crucial to the process was that the facilitator does not offer advice. Apart from facilitating the discussion and the process in the group, the facilitator minutes the mutual advice and conclusions from the farmer participants.

A common goal as a crucial basis for common learning

We suggest that the many changes which took place in the participating herds during the project may have been consequential of the consistent, continuous and common learning processes and exchange of experience and knowledge between farmers, based on the identification and ownership of a common goal in combination with individual farm-based analyses and goals (see Box 1). This process demands more than listening and thinking, and the aim to reach the common goals stimulates changed practices. This is perhaps the main difference between Farmer Stable Schools and the well-established concept of Danish Farmer Experience Exchange Groups. At all meetings, cases of success at the host farm were presented to the farmer group and this always gave a good, positive and encouraging perspective at the meetings. The focus on both success cases and problem areas encouraged all participants and gave farmers innovative ideas that could be applied to their own farm.

- Mutual respect
- Mutual trust and openness based on insight into each others' farm situations
- Common goal
- All solutions should fit to the goals and framework of each herd
- Equality in the group
- Democratic responsibility for a process
- Common learning
- Common building up and exchange of knowledge and experience, including success cases
- Ownership: sets the agenda and point to OWN perceived challenges
- Ownership: Make the conclusions and commitment

Box 1. Key values and features of the Stable Schools, which were identified through interviews with farmers and were considered crucial for the successful dialogue in the groups.

The collaboration and dialogue in the Dutch Farmer Study Groups

In the Dutch network programme since 2004, each year about 50 farmers groups are active in increasing the innovative capability to solve specific business problems (Wielinga et al, 2006)¹. These networks are based on farmers initiative (of at least 3 farmers) to improve the medium or long term sustainable farming practice with tangible results within one year and with knowledge as an essential ingredient. In these networks the facilitator is not a professional facilitator but more an expert on the subject with affinity with networking and with facilitating groups.

Caring dairy checklist

One of the network groups focussed on caring dairy and developed a checklist for animal welfare. The checklist has a 'kitchen table' component, a stable component whereby the farm and cows are assessed, a summarizing part and a part covering points to improve.

- In the kitchen table part, existing figures for the farm are summarized and commented upon. Disease incidences, culling reasons, percentage of stillborn calves, milk yield, fat and protein content and fat:protein ratio, somatic cell counts, fertility indicators, longevity and life production and

¹ Wielinga, HE, Geerling-Eiff, FA, Hoogerwerf, EC, Hubeek, FB, Wijk, van – Janssen, E. en Zaalmlink, BW. (2006). Facilitating networks for sustainable animal husbandry. 7th European IFSA Symposium , Wageningen, May 2006.

contact with animals of other farms are included. The items are discussed and compared with the goals of the visited farm.

- The stable part of the checklist assesses animal welfare based on performance parameters (BCC, locomotion, skin damages, cleanliness of the cows, ease of laying down and getting up in the cubicles, slipperiness of the walking area,) and based on design parameters (dead ends, overcrowding, obstacles, ventilation). Special attention is paid to the group of dry cows. Also quality (moulds, ground, mow burn) and availability of feed, hygiene and neatness of the housing, the yard and the silage clamps are assessed.
- In the summary of the assessment protocol, for each part the total number of points and the scored points are collated along with an overall total score.
- The assessment ends with the identification of three points to improve on the farm.

Assessing each others farms

The caring dairy group consists of 11 dairy farmers and one facilitator. The dairy farmers assess in groups of three farmers the farm of a colleague. The composition of the assessing group constantly changes so that finally all farmers assessed at least three other farms and all farms are assessed by different groups. Everyone involved is convinced that even the most critical remarks and the weak points of the farm detected in the assessment are used for the best of the animals, the farm and the farmer. During the process, the host farmer opens up the farm completely and the assessors adopt an open mind to the good and the weak points of the farm. The group is considered reliable and members have an implicit trust in each other. Farmers are trained in two training sessions by an expert and accompanied by the expert at the first assessment with the group on a farm of a colleague.

The host farmer organises the assessment on his/her farm, which involves coordinating a date for the assessment, providing the assessors with data for the kitchen table part and acting as host in providing coffee and lunch. The host farmer identifies specific goals, provides data clarification if needed, provides farm clothing and boots and guides the assessors on the farm tour and herd assessment. The host does not interfere during the assessment in the stable unless asked. At the end, the host farmer takes part in the discussion about the improvement points, comments on these and gives an indication if and when suggested improvements may be realized.

The assessors are provided with the data and compare these with the farm specific goals and judge them with their expert opinion. They can ask the host farmer for clarification if needed. In the stable environment, they only judge what is seen without interpretation or value. During assessment training separating judgement from value can be difficult. The assessors attempt to reach consensus on the assessed parameters and discuss differences. Scores are calculated and for the total assessment it is possible to identify the strong and the weak points of the farm. Together with the host farmer, the assessors discuss and prioritise the points they think requires improvement and listen to the responses of the host farmer. To keep balance, particularly at the start of the assessment process, it is advised that strong and positive points are also emphasised.

The facilitator in the caring dairy group organises the process and the groups, co-ordinates the provision of data, organises the training session and a session for evaluation of the results and the experiences at the assessments. If necessary, the facilitator requests a specialist to join the evaluation in order to provide explanation, background or additional specific information on a relevant topic. The facilitator joins meetings with facilitators of other network groups and learns also from those experiences.

The collaboration and dialogue in the advisory process of the pro-Q project

The Swiss pro-Q-project was created in 2003 in cooperation with one large Swiss national retailer (COOP) as main sponsor. The project will last until at least 2009. The aim of the project is to minimize the therapeutic and prophylactic antibiotic treatment of mastitis (during lactation and for drying off), to improve udder health and longevity of dairy cows via prophylactic measures and improvement of management and the use of non-antibiotic therapy.

In a first step data of potential mastitis causing factors were collected on each individual farm, including: general conditions, housing, feeding, human-animal interaction, milking technology and milking hygiene. Beside this an intensive diagnosis of the mastitis status of the herd based on quarter milk samples and milk recording data was conducted. During a period of at least 2 years participating farms were intensively

advised by the project team and, if there was an interest, also by their own veterinarians. Therapies were primarily based on homeopathic remedies. The development of mastitis causing factors and the mastitis status of the farms were followed up at regular intervals (at least yearly).

Each farm is allocated its own main responsible advisor from the pro-Q-team. This enables the development a trustful personal relationship between advisor and farmer. Farmers receive a monthly analysis of the actual milk recording including a retrospective analysis over the previous twelve months. Furthermore, results of quarter milk samples are transmitted via an animal-based protocol including milk recording data, results of earlier quarter milk samples and treatment data of the individual cow for one year back. All results are normally send via e-mail accompanied with a comment from the advisor. Further questions are answered via direct contact between farmer and advisor by phone call or e-mail.

The core activity involves 4-6 regular farm visits per year by the advisor, accompanied by the veterinary practitioner if required. During each farm visit a walkabout through the main living areas of the dairy cows (laying, walking, feeding, and milking area) is made and each individual cow is assessed with regard to body condition score, claw trimming status, cleanliness and technopathies. The findings are discussed in relation to the results of actual milk recording. Furthermore, therapeutic recommendations for individual cows are given.

Group discussion report: Adjusting the approaches to fit with farming and country conditions

Three related themes were chosen for group discussion. These were:

- 1) In which situations and how are person-to-person advisory service / animal health and welfare planning best made?
- 2) In which situations and how are farmer group advisory service / animal health and welfare planning best made?
- 3) How to ensure farmer ownership?

A main points raised in the discussion groups are summarised below.

Person-to-person animal health and welfare planning

In this group, the basic principles of dialogue were raised and discussed, as well as the practicalities of what the advisory dialogue should contain. Points raised in relation to the basic dialogue principles were:

- The dialogue should depend on the challenges at the individual farm;
- There should be sufficient flexibility:
 - o Meetings and a framework should be arranged in accordance with specific needs and relevance,
 - o The dialogue should be focused both on action ('tell me what you want from me' / 'tell me what to do') and reaction ('answer my questions');
- Advisors should be well prepared and create their own good possibilities for a good advisory situation;
- Respect is crucial both ways. Both dialogue partners should be ready to learn from each other;
- Advisors should take responsibility for their part in the process i.e.
 - o Keep promises; and
 - o React quickly to farmers requests.

Points raised in relation to the practicalities of the advisory process were:

- Focus on the milking situation in dairy herds, as many of the challenges and daily contact occur there. It is a good idea, if possible, for an advisor to be present during milking;
- Include the barn (cattle housing), the fields and the feeding resources;
- Look at individual animals and spend time with animals;
- In 'the kitchen':
 - o Go through documentation; and
 - o Write down all agreements and all decisions.

Farmer group animal health and welfare planning

- The most crucial element is that subjects are identified by farmers.
- A very powerful and fruitful approach is when farmers are closely involved in each others' farms, e.g. assessing each others situation.
- Benchmarking can be a good driving force for the discussions and the improvements. Farmers can see that they have good and bad elements in their herds.
- Which farmers should be included in farmer groups? There was consensus that only farmers who really explicitly wanted collaboration should go into this kind of process. Reluctance would result in resistance and lack of motivation and commitment.
- There should be a common interest among farmers in the farmer group.
- In the groups, discussions with experts can have benefit for everybody.
- In the group, all farms should be well introduced so that the other farmers understand the specific challenges of a particular farm, and the facilitator or discussion leader should ensure that sufficient information is gathered before a meeting takes place at a farm.
- All problem solving should be based on a continuous review of the situation.
- Certain elements, such as the feeding routines and mastitis situation, should always be included in the discussion when focusing on minimising medicine use / improving animal welfare, at least at the first farmer meeting at a farm.

How to ensure farmer ownership

- A framework cannot completely ensure the feeling of ownership, but this can encourage it – it is at all times up to the persons involved to ensure ownership.
- Set ground rules, and agree to them with all involved committing to these equally.
- For everybody involved in visiting a farm: LISTEN. The farmer should explain problems. Never dictate.
- Small detail can be important:
 - o The advisor should always ask where to sit, instead of running the risk of taking the farmer's place,
 - o ask the farmer where they prefer to start (outdoor or indoor?),
 - o explain all the steps in the process and gather all viewpoints,
 - o if using assessment, make sure that the host farmer understands all of the parameters and judgements.
- Motivation is important; often it is very good to underline the positive elements on the farm and what the farmer feels proud of rather than focusing on the problems and the mistakes.
- Focus on the advantages and benefits of all the improvements and efforts.
- The host farmer, advisor and fellow-farmers should be very conscious that the host farmer is the driving force for all improvements on the host farm.
- As advisor or facilitator should be aware of farmer silence and other signs that the farmer is not engaged in, or has to leave, the process.
- An advisory service that is paid for, will probably result in greater commitment and motivation by the farmer.
- In a farmer group everybody should be involved and give their opinions, and the group size should be adjusted accordingly.

Future perspectives

The authors have drawn summary points that are not necessarily those made during discussion, although some of these reflect remarks made as a response to the group discussions.

- Farmer ownership is important in dialogue, no matter whether it is in farmer groups or in a person-to-person advisory situation.
- In the discussion, terms were often used indicating that farmers could be 'non-cooperative'. This may raise the following questions relevant to the issues about ownership:
 - o If the process of e.g. animal health and welfare planning is really owned by the farmer this lack of co-operation should not be evident? If the farmer is resistant to the dialogue, it could very well be an indication of lacking feeling of ownership, and the question should then be put: 'What do you want from this process?'
 - o A common learning is stimulating for everybody. In a person-to-person dialogue, the advisor or the so-called expert is often not expected to learn but only to 'deliver knowledge and advice'. This can mean that the farmer is expected to change opinions and routines and

learn, without the other person in the dialogue going through this process. This may not be a relevant and fair approach. There could be situations where the advisor/expert learns as much as the farmer? Should these situations be promoted?

- All farmers are experts: experts in running a farm and adjusting general advice to their own farm conditions.
- The dialogue should always take the starting point of the challenge areas on each specific farm, irrespective of the type of dialogue.
- Benchmarking can be stimulating for the discussion, but it should not move focus from the specific farm (including improvements on this farm) to comparisons between farms that are very different and maybe also be based on very different sets of thinking.

Annex

Animal Health and Welfare Planning - A Review

Contributing to WP2 - Development of principles for animal health planning in organic dairy farms and assessing the use of health plans in the UK and Norway.

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1 Report Summary

In UK, animal health planning is being increasingly promoted and implemented in both the organic and conventional livestock sectors – health planning is compulsory for organic certification in the UK. The type health planning that is taking place and the health plans being used vary widely across the UK livestock industry. This study details how health and welfare plans are promoted and implemented by British Governments, industry quality assurance and organic certification bodies. Details of animal health and welfare planning activities taking place in other European countries are also detailed though these activities are limited compared to the UK. An analysis of the key principles of health and welfare plans and planning identified from these review is presented and these principles compared with those derived at the first ANIPLAN Workshop held in Denmark in October 2007. A review of attitudes towards health and welfare planning is presented and shortcomings of the "UK style" of health planning identified so that conclusions can be drawn as to how best to take effective animal health and welfare planning forward into European partner countries via the ANIPLAN project.

2 Introduction

In UK, animal health planning is being increasingly promoted and implemented in both the organic and conventional livestock sectors – health planning is compulsory for organic certification in the UK. At the moment very little is known about how health and welfare plans are developed, how they are implemented and how health and welfare planning is being promoted to farmers. Experiences in the UK are valuable for developing animal health and welfare planning on a European wide basis.

To this end, a study has been undertaken of the various organisations (governments, quality assurance bodies, organic certification bodies) in the UK and to a lesser extent Europe, that promote the concepts of animal health and welfare planning as being integral to good livestock management. Websites, reports, quality assurance and organic regulations and peer reviewed journal articles have been used to gather information on what health and welfare planning activities are taking place, what key principles of animal health and welfare planning are being promoted, what farmer perceptions are of the health planning process and written health plans, what the potential shortcomings of written health plans may be and some suggestions to take forward in the ANIPLAN Project.

Whilst the ANIPLAN Project is very much focussed on health and welfare planning for organic dairy cows, information from a much broader range of systems is presented in this document as there are many things that can be learned and transferred from other livestock sectors.

3 What is health and welfare planning?

The process of animal health and welfare planning is defined in a number of government and industry documents in the UK. In The Positive Animal Health Plan produced by Defra (2004)¹, farm health planning is defined as a pro-active approach to positive health incorporating animal disease prevention and control. A definition of exactly what is meant by "positive animal health" was not given in either the Positive Animal Health Action Plan (Defra, 2004) or the Animal Health and Welfare Strategy for Great Britain (Defra, 2004)². However, the definition of health proposed by the World Health Organisation in 1946 for human populations comprehensively identifies all aspects of positive health (Hovi et al, 2004)³ and applies equally well to animals – "Health is a state of complete physical, mental and social well-being, not merely the absence of disease or infirmity (WHO, 1946)⁴. The Welsh Assembly Government, in

¹ POSITIVE ANIMAL HEALTH - AN ACTION PLAN FOR A PARTNERSHIP APPROACH. Promoting high standards of disease prevention and control through farm health planning <http://www.defra.gov.uk/fhp/pdf/actionplan.pdf>

² Defra (2004) Animal Health and Welfare Strategy for Great Britain. Defra Publications, London, UK.

³ Hovi, M. Gray, D., Vaarst, M., Striezel, A., Walkenhorst, M. and S. Roderick (2004) Promoting Health and Welfare through Planning. In: Vaarst, M., Roderick, S. Lund, V. and W. Lockeretz (eds) Animal Health and Welfare in Organic Agriculture. CABI Publishing, Wallingford, UK, pp 253-277.

⁴ WHO (1946) Preamble to the Constitution of the World Health Organization, as adopted by the International Health Conference, New York, 19-22 June, 1946. Official Records of the World Health Organization, No. 2, p. 100.

the Animal Health Planning Framework (2007)⁵, describe animal health planning as the process of formalising and adding value to what they do instinctively as livestock keepers and it can help the farmer keep abreast of new problems and solutions, preempting potential health crises and the huge costs both in medicines and lost stock that may ensue. The Scottish Government (SEERAD)⁶ state that animal health planning is a proactive approach to raising livestock health and welfare standards and contributing to farm business profitability and product quality on the basis of individual veterinary advice and forward planning.

The Soil Association⁷, National Dairy Farm Assurance Scheme (NDFAS)⁸ and Assured British Meat (ABM)⁹ (the latter two being quality assurance schemes) all state that health planning is a written strategy of preventative healthcare. NDFAS and ABM go further by stating that health planning is also a recording system to monitor herd health and welfare.

The National Sheep Association (NSA) (NSA, 2006)¹⁰ were one of the few organisations to make the distinction between health and welfare planning and health plans. In an investigation into the attitudes towards farm health planning in the English sheep sector (NSA, 2006) farmers felt that they regularly undertook health planning to prevent or reduce disease problems on their farm, but many of them could see little value in health plans themselves which were perceived merely as paperwork for the benefit of others. This distinction between farm health planning and farm health plans was an important finding in the study as it influences the choice of future strategies for improving the health and welfare of the national sheep flock. In the same study (NSA, 2006) an industry representative highlighted the importance of having a written health plan document for cross-compliance purposes (in Scotland) and or quality assurance and organic certification schemes. Theoretically, this health plan document, if it was kept simple, could be more widely accepted by farmers and then emphasis could be placed on training, group discussions, veterinary advice etc. extolling the principles of health planning as a process rather than a piece of paperwork.

⁵ Welsh Assembly Government (2007) Animal Health Plan. Published by the Welsh Assembly Government.

⁶ Animal Health and Welfare in Scotland: Implementing the Animal Health and Welfare Strategy <http://www.scotland.gov.uk/Topics/Agriculture/animal-welfare/AHWStrategy/Introduction>

⁷ Pye-Smith, C. (2003) *Batteries Not Included: Organic Farming and Animal Welfare*. Soil Association, Bristol, UK.

⁸ National Dairy Farm Assurance Scheme standards: <http://www.ndfas.org.uk/>

⁹ Assured British Meat Beef and Lamb Farm Standards: http://www.abm.org.uk/abm/far_section.aspx?id=000HK277ZX.0E1UB5JS9XSC0

¹⁰ National Sheep Association (2006) National Sheep Association investigation into attitudes towards farm health planning in the English sheep sector. National Sheep Association, UK.

Vaarst et al (in prep)¹¹ distinguish between three types of animal health and welfare planning. The first, acute problem solving, is carried out in the face of a disease outbreak or when a health problem is identified as causing a decrease in productivity. The second type is tactical planning which is a goal oriented strategy to avoid a particular disease and is an approach commonly used on both conventional and organic farms. This type of planning involves a detailed knowledge of the problem disease and the measures required to prevent or minimise the risk of the disease occurring. This type of planning is often used with disease accreditation schemes such as the Johnes Disease and BVD schemes (Cattle Health Certification Standards) in the UK. The third type of planning, strategic planning, uses farm-specific goals as its starting point and includes both strategic and tactical elements. Such planning tends to be more aspirational than operational, making it more difficult to measure the outcomes of strategic planning and subsequently whether progress is being made. Tactical planning by contrast involves data collection and requires review and evaluation. A combination of both strategic and tactical planning is essential to ensure farmer buy in by setting the goals themselves, whilst at the same time ensuring progress is made by collecting data and reviewing.

Ultimately the aim of health and welfare planning is to improve the health and welfare of livestock and more lateral thinking perhaps needs to go into what constitutes animal health and welfare planning and the distinct roles of health plans versus health and welfare planning.

4 Animal Health and Welfare Planning Activities in Great Britain

Animal health and welfare planning is high on the political agenda of government and industry bodies. Outlined below are some of the activities taking place in Great Britain related to health and welfare planning – the ultimate aims of these activities being the improve the health and welfare of farmed livestock in Britain and to develop a national disease prevention strategy.

4.1 Animal Health and Welfare Strategy for Great Britain

The Animal Health and Welfare Strategy for Great Britain¹², published in 2004, was designed to improve the health and welfare of kept animals in England, Scotland and Wales.

The Animal Health and Welfare Strategy for Great Britain explicitly states:

“Livestock owners can improve the health and welfare of their animals through animal health planning. This involves:

- identification of risks of introduction and spread of disease and infections;
- early recognition of disease; and

¹¹ Vaarst, M., Noe, E., Andersen, H.J., Enevoldsen, C., Thamsborg, S.M., Kristensen, T., Enemark, P., Bennedsgaard, T.W., Pedersen, S.S., Sorensen, C., Nissen, T.B. and Stjernhold, T. (in preparation). Health advisory service in Danish organic herds. Development of three different models based on farmers expectations to advisors.

¹² Defra (2004) Animal Health and Welfare Strategy for Great Britain. Defra Publications, London, UK.

- prioritising measures to control any existing problems and manage risks, including the responsible use of medicines.
- preventing the introduction of endemic diseases or zoonoses and thus improving the productivity of the overall herd or flock; and
- slowing or minimising the spread of disease from one farm to another during an exotic disease outbreak."

The implementation of the strategy is being undertaken by the English, Welsh and Scottish Governments and differs between countries. Details of the animal health and welfare planning activities as part of the strategy implementation in each country are described below.

4.1.1 England

The following activities, which support and promote the use of farm health planning, are taking place to implement the Animal Health and Welfare Strategy for Great Britain in England (Defra, 2004)¹³.

- The Positive Animal Health Action Plan
- A Review of Best Practices in Disease Prevention in GB
- Identification of the Costs and Benefits of Disease Prevention
- Dissemination of Research
- A Review of Training and Advice Needs

Animal health and welfare planning in England is entirely voluntary except for those livestock keepers who wish to be organically certified or participate in certain industry lead quality assurance programmes. Specific funds are not available in England to support farmers directly to develop and maintain animal health plans on their farms (unlike Scotland).

4.1.1.1 The Positive Animal Health Action Plan

The Positive Animal Health Action Plan (Defra, no date)¹⁴ aims to promote high standards of disease prevention and control and foster a culture of good practice by those involved with the care, health and welfare of farm-reared animals. The action plan defines what is meant by animal health planning and outlines the activities it proposes to increase the consistent and effective use of animal health planning by all animal keepers in England.

Farm health planning is defined (Defra, no date) as a proactive approach to positive animal health incorporating animal disease prevention and control. It is:

- Early recognition and identification of diseases present at a holding;
- Identification of the risks of introduction and spread of diseases and infections;
- Putting in place measures to manage risks, and improve overall disease prevention and control.
- A tool for identification of cost effective measures, which contributes to farm business planning.

¹³ Defra (2004) Delivering the Animal Health and Welfare Strategy in England. Implementation plan 2004. Defra Publications, London, UK.

¹⁴ POSITIVE ANIMAL HEALTH - AN ACTION PLAN FOR A PARTNERSHIP APPROACH. Promoting high standards of disease prevention and control through farm health planning <http://www.defra.gov.uk/fhp/pdf/actionplan.pdf>

A definition of exactly what is meant by "positive animal health" was not given in either the Animal Health and Welfare Strategy for Great Britain (Defra, 2004) or the Positive Animal Health Action Plan (Defra, no date)

In addition to promoting animal health and welfare planning, a number of other activities are outlined in the Positive Animal Health Action Plan (Defra, no date):

Best and good practice

Examples of best and good practice are identified, collated and disseminated throughout the livestock sectors to help livestock keepers achieve consistently high standards of animal health by the most effective means. Examples of good practice case studies are available on the Farm Health Planning pages of the Defra website (<http://www.defra.gov.uk/fhp>).

Costs and benefits of disease prevention

Identifying the costs and benefits of implementing good animal health practice will help provide both individual livestock keepers and the different industry sectors with a clearer understanding of the value of farm health planning. A Defra funded project - Farm level case studies of the costs and benefits of disease control measures on livestock farms¹⁵ is currently underway (due to finish at the end of 2007) using case studies to model six different livestock diseases – two for cattle (digital dermatitis and bovine virus diarrhoea), two for sheep (ectoparasites and footrot), one for pigs (enzootic pneumonia) and one for poultry (coccidiosis). The cost benefit models for these diseases have been developed, tested, validated and demonstrated at various farmer events. The work has not officially been published to date.

Dissemination of research and a review of existing training and advice

Significant funding is directed at animal health and welfare research, so it is an essential part of the implementation plan that the benefits of improved husbandry and disease control practices are effectively communicated in an appropriate manner to all those who have an interest. The government will also review existing training and advice to ensure that it is easily accessible by those that need it such as farmers, vets and those who advise livestock keepers, and to review these arrangements where necessary.

4.1.2 Wales

In Wales, as in England, animal health planning is a voluntary initiative that farmers are being strongly encouraged to take up both to improve the health and welfare of kept animals as well as to reduce the costs of maintaining high levels of health. Health Planning is being promoted to farmers as basically formalising and adding value to what they do instinctively as livestock keepers. A careful review with a professional practitioner can help the farmer keep abreast of new problems and solutions, pre-empting potential health crises and the huge costs both in medicines and lost stock that may ensue.

An Animal Health Planning (AHP)¹⁶ framework for sheep, beef and dairy enterprises

¹⁵ Farm level case studies of the costs and benefits of disease control measures on livestock farms. Defra Funded Project SE4004. http://www2.defra.gov.uk/research/Project_Data/More.asp?I=SE4004&M=CFO&V=URD

¹⁶ Welsh Assembly Government (2007) Animal Health Plan. Published by the Welsh Assembly Government.

has been prepared and published in paper format and includes advisory notes by the Office of the Chief Veterinary Officer (OCVO). The AHP framework is described as a recorded risk management cycle that, ideally, includes enterprise records and incorporates:

- Evaluation (assess performance and risks)
- Mitigation (prevent risk)
- Responding (make changes and set targets)
- Monitoring (keep records)
- Evaluation....

The AHP framework itself comprises an introductory section, a section on farm details (name, address, responsible persons etc.), disease risk and prevention (bio-security), general assessment of risks to the health and welfare of the animals, modules for each of the livestock categories listed above which include details on quarantine facilities and movements and worksheets to analyse the specific livestock enterprise, and finally, a section on prioritising issues to deal with, finding solutions and setting targets for improvement. The AHP framework is not an all encompassing animal health planning tool and it is recommended that advice from veterinary and other expert consultants will be required to make it work to maximum effect.

The veterinary and/or expert advisors role is to help their client identify the most important and significant risks; optimise production; advise the client as to what mitigation might be available and to help them to decide what action to take.

The AHP framework and guidance notes have been distributed to all veterinary practices in Wales and a number of veterinary training days have taken place. The framework will continue to be promoted through farmer events and training days. Copies of the framework are not sent to all farmers directly - they have to request a copy either through their vet or via the Welsh Assembly Government. This is to ensure data is collected on the number of farmers requesting information on animal health planning and to enable vets to engage with interested farmers.

4.1.3 Scotland

Land management contracts (LMCs) were introduced in Scotland by the Scottish Executive Environment and Rural Affairs Department (SEERAD) in 2005 to help to encourage sustainable land management in Scotland (this includes the implementation of the Animal Health and Welfare Strategy for Great Britain). It is a whole farm system of support which makes payments for the delivery of environmental, social and economic benefits for public good. The LMC concept has 3 tiers:

- 1) The Single Farm Payment and cross compliance – securing a basic level of environmental protection, food safety and animal welfare.
- 2) LMC Menu Scheme – delivering widespread benefits leading to economic, social and environmental improvement. This scheme includes the Animal Health and Welfare Management Programme.
- 3) Development for 2007 – will deliver tailored benefits leading to economic, social and environmental enhancement.

4.1.3.1 Animal Health and Welfare Management Programme

The Animal Health and Welfare Management (AHWM) Programme is one of the available options under the Land Management Contract Menu Scheme. This is a five-year commitment that involves farmers taking a proactive approach to raising livestock health and welfare standards and contributing to farm business profitability and product quality on the basis of individual veterinary advice and forward planning. Those individual businesses with a minimum of four livestock units are eligible to apply to carry out all the options. Pigs and poultry are currently excluded from participation of the scheme.

Support for farmers is available towards the cost of implementing an individual AHWM Programme that reflects particular farm management structures. There are specific supported activities, including:

- Animal Health and Welfare Management Plan
- Performance Monitoring / Benchmarking
- Bio-security (including fencing, quarantine facilities etc.)
- Sampling (livestock blood/disease sampling)
- Forage Analysis (quality of feed)

Whereas the first option is compulsory, any or all of others can be taken up depending on the needs of particular business.

4.1.3.2 Animal Health and Welfare Management Plan

There are two compulsory actions:

- Implement a proactive scheme for treating diseases, including guidance on following a vet's advice and treatment – the scheme will detail the agreed first and second lines of treatment, individual dosage instruction and the withdrawal periods for each treatment.
- Implement a scheme for using vaccines and preventative medicines - detailing the vaccines or preventative medicines that will be used, and individual dosage instructions and withdrawal periods for each vaccine or preventative medicine.

There is no standard template for the Plan, however, it must include:

- a summary of the annual discussion (assessment) with a vet,
- a list of agreed treatment and vaccine/preventative medicine plans as per the compulsory actions outlined above,
- outline of the agreed activities under any voluntary options the farmer wishes to take, although the detail may be given in other documents and finally
- the Animal Health and Welfare Management Plan must be agreed, implemented and re-assessed with a vet on an annual basis.

An alternative to having an Animal Health and Welfare Management Plan under the Land Management Contract Menu Scheme is membership of quality assurance and organic schemes. In the UK, animal health planning is mandatory for all organic producers and also compulsory in many quality assurance programmes in conventional livestock farming (only those schemes where health planning is a compulsory requirement are acceptable).

4.1.3.3 Supporting activities in Scotland

The Animal Health and Welfare Management Programme (membership of approximately four and a half thousand livestock farmers in 2006) is supported

through the Scotland Rural Development Plan. This initiative supports farmers in bringing their vet on-farm at least annually to discuss and agree a plan to improve farm animal health and welfare. As well as helping to raise standards of animal health and welfare on-farm, this initiative is also indirectly supporting the sustainability of large animal veterinary practices. As part of the Animal Health and Welfare Management Programme, farmers were also able to obtain support for additional recording on-farm for animal health and welfare benchmarking purposes. Since 2005, individual farmers have been collecting data that can be utilised for on farm monitoring of health and welfare, feeding back into the review and implementation of Animal Health and Welfare Plans. In the summer of 2007 it is intended to launch a database to enable cross-industry benchmarking analysis of this data, as well as its long-term storage.

In previous years, promotion of the Programme, and health planning as a concept, through a presence at agriculture shows and workshops for both veterinary surgeons and farmers has contributed to the impressive uptake of the scheme, while the regular provision of induction training for veterinary surgeons has helped veterinary practices to implement the Programme on the ground. Additional activities included the ongoing development of a web-based sheep health plan, which has already attracted significant attention, and the production and free distribution of a DVD promoting the benefits of health planning and good bio-security. This DVD was produced jointly by the Scottish Executive, Quality Meat Scotland and SAC, bringing Government, industry and researchers together to get the message across.

4.1.4 Department of Environment Food and Rural Affairs (Defra)

4.1.4.1 Dairy and Beef Cattle

DEFRA is funding 27 projects in the beef and dairy sectors to promote the use of active farm health planning. The projects aim to:

- Show the benefits of farm health planning at farm level such as healthy animals and healthy profits;
- Increase awareness of farm health planning, planning tools and cost benefit models through targeted communications, advice and training;
- Create a network of farm health planning champions and advocates to promote the benefits and practicalities of farm health planning to the rest of industry.

The approach to proactive health planning of the FHP working group is based on three key principles of:

Measurement – identifying the impact of health on the performance of stock, good record keeping for benchmarking and identification of problem areas;

Management - prioritising control measures for these problems using cost/benefits calculations and the most effective management methods. Development of action plans for specific issues;

Monitoring – using good recording, assessing effectiveness of measures and reviewing/revising health plans accordingly.

This requires a four-stage process:

- Health and disease parameters surveillance
- Risk analysis and cost benefit assessment
- Risk management decision making
- Monitoring and reviewing outcomes

In practice this means:

- Farm disease recording with focus on determining key performance indicators
- Farmer and vet/consultant jointly identify existing health problems on a farm, rating them in economic importance and making evidenced based health and economic decisions as to which should be emphasised
- Institute management, husbandry, treatment and vaccination changes
- Monitor and review health and financial outcomes

DEFRA provides on their website the health planning charts that cover the essential eight areas of dairy health planning¹⁷:

- Fertility
- Milk hygiene and mastitis
- Lameness and locomotion
- Infectious and parasitic disease
- Calving and metabolic diseases
- Milk profile
- Calves and youngstock
- Culling and disposals

4.1.4.2 Sheep

A national initiative to promote the adoption of farm health planning in the sheep industry was launched in June 2007¹⁸. The initiative is industry led and aims to demonstrate the performance value of implementing health planning whilst encouraging high standards of health and welfare.

The Sheep Farm Health Planning communications campaign emphasizes the need to take a long term view of health and welfare and encourages farmers to contact a vet or adviser to go through a three stage process of measuring existing performance, managing the health planning process and its implementation, and monitoring ongoing progress adapting health plans in the light of experience.

4.1.4.3 Pigs

As part of the Farm Health Planning partnership¹⁹, Defra has commissioned a pilot project to design, test and implement a web-based Pig Herd Health Plan (PHHP)²⁰. This pilot project involves collaboration between the National Pig Association (NPA), the British Pig Executive (BPEX), the Pig Veterinary Society (PVS) and producers, in partnership with Defra. The pilot PHHP acts as an information hub dedicated to pig health, linking information on health management factors, veterinary inputs, pig production data, and carcase quality.

¹⁷ DEFRA dairy health planning charts - <http://www.defra.gov.uk/fhp/cattle/health-planner.htm>

¹⁸ Defra (2007) Improve your bottom line. The English Sheep Farm Health Planning Initiative. Defra Publishing, London, UK.

¹⁹ Defra Farm Health Planning Partnership – for information: <http://www.defra.gov.uk/fhp/index.htm>

²⁰ For a demonstration of the web based Pig Herd Health Plan (PHHP) developed by the Defra Farm Health Planning Partnership see: <http://www.demo.phpanalysis.com/>

The British Pig Association (BPA) is also working in partnership with Defra to promote health planning to the small-scale/hobby pig farming sector in England. The BPA are arranging a series of regional workshops that concentrate on pig health and welfare but also cover basic tasks such as bio-security, identification and safe handling. The focus will be on health planning without excessive medication alongside the need for prevention of exotic disease as part of the national breed conservation effort (farmers taking part in the workshops will be provided with a simple template for a health plan).

Defra is also funding a project under which BPEX, in conjunction with the NPA, will be working with vets over the coming year to create or develop existing self help producer groups²¹. These groups will allow farmers to discuss the health issues relevant to them with their vet and other like minded producers. The subject matter discussed will be decided by the group and vet who will be facilitating the meetings. This will provide farmers with access to more veterinary time and other producers' knowledge and experiences. Over the course of the year, farmers will learn to develop their health plans and introduce changes that will have measurable benefits to the health of their pigs. This will be achieved by getting an understanding of their current health status; pooling producer knowledge and using the herd health plan as an evolving and up to date management tool.

4.1.4.4 Poultry

A pilot project began in summer 2007 to identify the current status of poultry farm health planning and to develop a generic planning template that can be used by all poultry farmers and keepers. Details of the pilot are not yet available²².

4.2 UK Organic Certification Bodies

4.2.1 *Compendium of UK Organic Standards*

The Compendium of UK Organic Standards (Defra, 2006)²³ is the standard for organic food production that must be complied with in the UK. It is based on, and complies with, Council Regulation (EEC) No. 2092/91, as amended. There are some differences between the livestock standards in the Compendium, and Council Regulation (EEC) No. 2092/91, as permitted by Article 12 of the Council Regulation – the key difference being in relation to Annex 1, Article 5 (EC, 1991) which in the Compendium, has the following additional article on animal health planning:

Article 5.1.2 of the Compendium states:

"The development and management of organic livestock systems requires special care in nurturing positive health and vitality, ensuring the proper control of disease and the encouragement of positive animal welfare. ("Positive welfare" is used here in the sense used by Farm Animal Welfare Council (FAWC) to mean the satisfaction of

²¹ For more information on the Defra/BPEX/NPA self help producer groups see: http://www.bpex.org/technical/tech2/health/farm_health_planning-cornwallgroup.asp

²² Details of the poultry farm health planning project will become available on the following web site (<http://www.defra.gov.uk/lhp/poultry/index.htm>) on completion of the project.

²³ Defra (2006) Compendium of UK Organic Standards. Defra Publishing, London, UK

the animal's needs, including behavioural needs and not merely the avoidance of cruelty.) This must be provided for by a plan drawn up by the farmer, preferably working in partnership with a veterinary surgeon and agreed between them during and after conversion, to develop and operate an organic livestock system which conforms to these Standards. The plan must ensure the development of a pattern of health building and disease control measures appropriate to the particular circumstances of the individual farm and allow for the evolution of a farming system progressively less dependent on allopathic veterinary medicinal products."

In the Compendium, Article 5.1.2 is accompanied by a guidance note which suggests that an established, recognised template, for example the Bristol Welfare Assurance Programme (BWAP)²⁴ should be used for developing health plans. This BWAP system aims to increase the ability of certification schemes to deliver assurance to consumers on animal welfare by incorporating valid, repeatable and feasible animal-based assessment techniques into certification schemes. The assessment links the data from the assessment of medicine records, and animal based observations with an evaluation of the farms management of health and welfare issues (health plan) and an assessment of compliance with relevant certification or legal requirements.

4.2.2 *The Soil Association*

The Soil Association states (Pye-Smith, 2003)²⁵ that organic livestock farming aspires to what the Farm Animal Welfare Council (FAWC) describes as 'positive welfare'. This means far more than the avoidance of ill-treatment; it implies that the animals are kept in a state of excellent health and that all their needs, physical and behavioural, are satisfied. Organic farmers seek to avoid the appearance and spread of diseases and parasites without recourse to conventional veterinary treatments, although there is a requirement that animals which become ill must be treated immediately. Antibiotics and other veterinary medicines can be used under the guidance of a veterinary surgeon "to save life, to prevent unnecessary suffering, or to provide the only way to restore the animal to full health."

General rules of organic livestock farming include:

- Selecting breeds which are adapted to local conditions and resistant to diseases.
- Organic livestock must have access to pasture whenever conditions allow, the free-range lifestyle is considered as of fundamental importance for animal welfare and health.
- Encouraging farmers to have closed herds and flocks (reared exclusively on the farm) to avoid risk of introducing diseases.
- Housing conditions must meet the animal's biological and ethological needs (sufficient space, good access to food and water etc.).
- Health and vitality of organic stock is based on sound nutrition.
- All organic farms must have an animal health plan which is reviewed annually – together with the management plan it provides an outline of the strategies the farm will adopt to diagnose and remedy any health and welfare problems.
- Practising mixed grazing in order to keep internal parasites at bay.
- Using antibiotics for 'growth promotion' purposes is prohibited.
- Vaccination is permitted only where there is a known risk of a disease which cannot otherwise be controlled.

²⁴ Bristol Welfare Assurance Programme <http://www.vetschool.bris.ac.uk/animalwelfare>

²⁵ Pye-Smith, C. (2003) *Batteries Not Included: Organic Farming and Animal Welfare*. Soil Association, Bristol, UK.

4.2.2.1 Recommendations of Soil Association in relation to animal health planing²⁶

In organic livestock systems the prevention of pest and disease problems and high levels of management and husbandry is the key. The standards require all producers to submit an animal health plan during the early stages of their conversion. An animal health plan should provide a written strategy for the management of animal health to organic standards during the conversion period - and beyond. Producers are strongly advised to get advice from their veterinary surgeon in developing the plan, although this is not a formal requirement.

The plan should:

- Identify all significant potential livestock pest and disease problems that may occur
- Outline the methods of preventing their occurrence
- Outline what treatments will be used should they occur and
- Describe an approach to improvement of overall herd-health and reduction of reliance on veterinary treatments.

As a rough guideline the animal health plan might:

- Identify all persistent mineral deficiencies, disease and parasite health problems that occur on the farm
- Identify husbandry changes that will be needed in order to remedy problems, such as the adoption of a clean grazing system, appropriate stocking levels, improved hygiene practices and improved housing ventilation
- Identify all treatments that are used - or may have to be used - at all stages of the conversion period - and beyond. The plan should identify how the use of these treatments will change throughout the conversion process and ways of reducing reliance on veterinary treatments and ensuring that organic withdrawal periods are observed, etc.
- Identify different management practices for all ages of stock including the feeding regime, housing details, medication procedures, grazing policy and the management practices that will develop immunity (e.g. selection for breeding, choice of pasture for youngstock and so on)
- Identify record keeping procedures and systems. Producers are expected to keep detailed records and invoices of all brought-in-feeds, livestock movements and veterinary treatments, along with their field and crop records

The animal health plan should be revised on a regular basis (at least once a year). In this way it can become a useful management tool for monitoring pest and disease problems in the herd, identifying what has/hasn't worked in the past - and any key problem areas. It should also be updated (preferably with the vet) according to the progress or problems experienced. All members of farm staff dealing with livestock should have access to and understand the animal health plan.

4.2.3 *Organic Farmers and Growers*

The development and management of organic livestock systems requires special care in nurturing positive health and vitality, ensuring the proper control of disease

²⁶ Soil Association (2006) [Organic beef and dairy production introductory guide](#). Soil Association, Bristol, UK.

and the encouragement of positive animal welfare. ('Positive welfare' is used here in the sense used by Farm Animal Welfare Council (FAWC)²⁷ to mean the satisfaction of the animal's needs, including behavioural needs and not merely the avoidance of cruelty.) This must be provided for by a plan drawn up by the farmer, preferably working in partnership with a veterinary surgeon and agreed between them during and after conversion, to develop and operate an organic livestock system which conforms to these Standards. The plan must ensure the development of a pattern of health building and disease control measures appropriate to the particular circumstances of the individual farm and allow for the evolution of a farming system progressively less dependent on allopathic veterinary medicinal products. Organic Farmers and Growers has developed a guide to developing Health Plans on organic livestock units for producers²⁸ which can be used for creation of the plan and the pro forma Health Plan Record sheet, which should be used to record the contents²⁹.

Development of the Plan must involve the personnel who manage the stock and include³⁰:

- The disease organism or health problem;
- The management/husbandry practices that will be used to break the organism's life cycle and reduce the reliance on veterinary treatments;
- The management/husbandry practices or alternative therapies that will be used to minimise or reduce the problem;
- The selected veterinary medicines that will be used should the management practices not be successful;
- The specified withdrawal periods for the treatments and the longer withdrawal periods required in the Standards;
- The necessary vitamin and mineral supplements needed to maintain health;
- Ongoing monitoring to ensure the effectiveness of the Plan and to update it as necessary.

The Animal Health Plan should help the Livestock Keeper reduce, in a planned and careful way, the level of medicine use on the converting/organic livestock unit. The farmer can use the appropriate veterinary treatments, given the increased withdrawal time to minimise the suffering of animals but he/she must also look at how to prevent the need for such treatments in the future.

²⁷ Defra (2006) *Compendium of UK Organic Standards*. Defra Publishing, London, UK

²⁸ Organic Farmers and Growers (2006) *A guide to developing health plans for organic livestock units – Technical Leaflet 105*. Organic Farmers and Growers, UK

²⁹ OF&G inspection and certification control manual, Livestock production standards (section 8):

<http://www.organicfarmers.org.uk/licensees/controlmanual/index.php>

³⁰ OF&G inspection and certification control manual, Documentation for producers (section 6):

<http://www.organicfarmers.org.uk/licensees/controlmanual/index.php>

4.2.3.1 Practical steps to develop a Health Plan³¹

As well as outlining the key principles for health and welfare planning, Organic Farmers and Growers also provide advice on the practical steps that should be taken to develop a health plan. These are as follows

- 1) Ask a vet to make a consultancy visit to discuss the establishment of the Health Plan;
- 2) Make a copy of a record sheet for each disease or health problem that can be filled;
- 3) Identify the disease organism or health problem;
- 4) Learn about the organism's life cycle and/or the health problem;
- 5) Identify the current veterinary or other treatments used;
- 6) Think about management/husbandry practices that could be used to break the organism's lifecycle or improve the animal's health, whilst reducing reliance on veterinary treatments;
- 7) Identify management/husbandry practices or alternative therapies that could be used to minimise or reduce the problem;
- 8) Identify in advance the alternative veterinary medicines that can be used should the management practices not be successful;
- 9) Identify the specified withdrawal periods for the treatments and calculate the longer withdrawal periods required for organic management;
- 10) Include the personnel who manage the stock in the process and ensure that a copy of the Health Plan is made available to them;
- 11) Monitor the effectiveness of the Health Plans with the assistance of the Vet and/or farm personnel and update them or create new plans where necessary.

4.2.4 Scottish Organic Producers Association (SOPA)

SOPA developed a livestock management plan proforma in 2000³². The following details what should be included for each livestock enterprise:

- Describe present management.
- Describe how this management is to be re-evaluated, justified and modified in the developing organic system
- Examine what disease is present or can be anticipated. What evidence has been taken into consideration in developing the present system?
- Identify those areas that may need to change under organic management or require additional veterinary investigation.

³¹ A Guide to Developing Health Plans on Organic Livestock Units for Producers (OF&G technical leaflet 105)

http://www.organicfarmers.org.uk/licensees/farmersandgrowers/technical_leaflets/index.php

³² www.safonetwork.org/workshops/ws2/presen/Atkinson.pdf - Assessing animal health and welfare from a Certification Bodies point of view Chris Atkinson Technical Manager Scottish Organic Producers Association, SAFO 27 March 2004

4.3 UK Livestock Sectors

4.3.1 RSPCA Freedom Food³³ - Dairy³⁴ and Beef Cattle³⁵ Health Plan Guidance

Freedom Food is a farm assurance and food labelling scheme set up by the RSPCA in 1994 to improve farm animal welfare and to address growing consumer demand for higher welfare produce. The production of a written veterinary health plan is a requirement of the assurance scheme. The plan should be agreed between the veterinary surgeon and the producer and, where appropriate, the herdsman. It should involve regular visits to the herd by the farm's own veterinary surgeon.

The health plan should cover the following four areas:

Basic disease control measures - Where possible, the emphasis should be to control disease by using management and husbandry techniques rather than relying totally on routine medicinal therapies. The areas that need focus are: mastitis, parasite control, lameness, vaccination, stockmanship, neonatal care, pneumonia / respiratory disease, carcass disposal and casualty slaughter.

Herd security against infectious disease - Measures designed to prevent new infectious disease agents from being introduced to the farm might include maintaining a closed herd whenever possible. Such measures include: quarantine, disposal of clinical waste, storage of medicines, zoonoses and notifiable diseases.

Monitoring and control of disease present on the farm

The herd must be continually monitored and records kept for herd performance including: production diseases, infectious diseases, and injury as a result of housing/husbandry. The objective must be to use the records as part of a preventative medicine policy, as well as being used as part of the daily management of the unit to help evaluate the health/welfare status of the herd. All treatments administered, their success, and any withdrawal period should also be recorded. The recording of births, deaths, movements and medicine use is a legal requirement.

Disease surveillance

An important part of any health plan is the prompt identification of disease problems before they become serious. Stockmanship of a high quality is crucial for successful identification of potential problems. Appropriate examinations and laboratory tests (where necessary) enable early warning of disease.

³³ RSPCA Freedom Food website:

<http://www.rspca.org.uk/servlet/Satellite?pagename=RSPCA/RSPCARedirect&pg=FreedomFoodHomepage>

³⁴ RSPCA (1999) RSPCA Veterinary Health Plan – Dairy Cattle Guidance Notes. RSPCA, Horsham, West Sussex, UK.

³⁵ RSPCA (1999) RSPCA Veterinary Health Plan – Beef Cattle Guidance Notes. RSPCA, Horsham, West Sussex, UK.

4.3.2 *The National Dairy Farm Assured Scheme (NDFAS)*³⁶

Increasingly consumers are seeking reassurance in the areas of animal health and welfare and many physical measurements can be taken on farm. When considered in isolation, these measurements may give a misleading indication of the welfare or health status of the dairy cows in the herd. This scheme places increased emphasis on the keeping of accurate and meaningful health records, which, with the help of veterinary surgeons, will allow the monitoring of herd health and welfare.

The assurance of herd health and welfare under NDFAS requires the presence of a Herd Health Plan. This is a written document in a form of a plan of preventative healthcare and protocols as well as a recording system to monitor herd health and welfare. The records must chronicle the incidence of specific health conditions and reflect prevalence by assessing progress of each condition over time. A working health plan provides the assurance that health and welfare are being monitored and addressed on an assured farm, with specific protocols and records reviewed at least annually for routine and preventative care.

The health plan can be developed with the help of models or templates provided by various agencies. The plan must be structured for each individual farm. It is recommended that the plan will be discussed and agreed with a veterinary surgeon, although it is not an obligatory requirement.

4.3.2.1 Herd Health Plan Requirements

There must be a written herd health plan present on the farm that is available to all farm staff who have responsibility for the animals, and which fully complies with the requirements of the scheme. The herd health plan must be reviewed annually. Detailed records for the occurrence of all health and welfare conditions must be maintained on the farm, including: lameness, mastitis, fertility, reproductive disorders and calving problems, metabolic disorders, calf diseases, other diseases and conditions.

4.3.3 *Rural Business School, Duchy College – Devon Farm Health Planning Group*³⁷

An initiative to promote the adoption of farm health planning in the cattle industry has been launched in Devon. The project aims to demonstrate the financial value of implementing health planning while encouraging high standards of animal health and welfare. The Devon Farm Health Planning Group is collaboration between six Devon-based veterinary practices and the Duchy College Rural Business School. The Group demonstrate the economic and animal health importance of high quality proactive herd health planning by working in partnership with selected focus farms in West, North & Mid- Devon. The focus farms are selected to reflect the range of different cattle enterprises existing across the county, ranging from intensive dairy to extensive suckler production. The information gained from the project will be disseminated to the wider farming community via focus farm based open days and regular communications with the farming press and so encourage the widespread adoption of health planning by cattle farmers across the county.

³⁶ National Dairy Farm Assurance Scheme standards: <http://www.ndfas.org.uk/>

³⁷ http://www.cornwall.ac.uk/rbs/index.php?page=_Projects&id=1457

4.3.4 Assured British Meat (ABM) standards³⁸

ABM, in setting assurance standards for the beef and lamb sector, takes a whole chain approach with beef and lamb farms, livestock transport, auction markets, abattoirs and cutting and packing plants being included.

The ABM farm standards include sections on Animal Welfare and Animal Health and Nutrition. Under the Animal Health section it is stated that: 'A written herd/flock health plan must be established, implemented and reviewed at least annually or more frequently in the event of any substantial changes to husbandry practices'. The purpose of the written herd/flock plan is to help participants to review their approach to animal health on a regular basis and demonstrate commitment to preventative medicine and planned animal health. Producers are encouraged to seek veterinary advice in preparing the plan.

As a minimum the plan must cover the areas of:

1. farm bio-security,
2. vaccinations,
3. parasite control,
4. routine management procedures and
5. veterinary operations.

Animal health planning in the ABM standards is defined as a proactive approach through planning, monitoring and reviewing to ensure positive animal health incorporating animal disease prevention and control. It is:

- Early recognition and identification of diseases present at a holding;
- Identification of the risks of introduction and spread of diseases and infections;
- Putting in place measures to manage risks, and improve overall disease prevention and control.
- A tool for identification of cost effective measures, which contributes to farm business planning.

4.3.5 Assured British Chicken³⁹

Assured Chicken Production (ACP) is an industry-wide initiative that addresses all the important issues concerning the production of chicken. It is the objective of Assured Chicken Production to set standards for the nutrition and welfare of poultry and to verify producers' compliance with them. Another objective is the development of the standards to achieve high levels of food safety and environmental care.

To meet these requirements each site must have a written health and welfare programme tailor-made to the needs of the unit, and must contain a strategy for the prevention and control of common diseases. As a minimum the programme must be annually reviewed and updated. The programme must set out health and husbandry procedures covering the whole of the production cycle. The scheme is audited to ensure a written programme is in place.

³⁸ ABM Beef and Lamb Farm Standards:
http://www.abm.org.uk/abm/far_section.aspx?id=000HK277ZX.0E1UB5JS9XSC0

³⁹ http://www.assuredchicken.org.uk/_code/common/item.asp?id=4035881

4.3.6 National Animal Disease Information Service (NADIS)

NADIS was formed over 10 years ago to monitor diseases in cattle, sheep and pigs. It currently consists of 54 sentinel practices and the 6 UK Veterinary Colleges, though there are plans to expand this to 100 veterinary practices with funding support from Defra. Their primary role is to provide information across the whole spectrum of endemic diseases of interest to farmers and vets, on a regional basis, and consider pigs, cattle and sheep. They provide forecasts (e.g. parasite forecasts based on data collection and climatic patterns), health problems to look out for each season and what can be done to prevent/treat, discussion forums for vets and farmers and analysis of disease trends across time (over 10 years data so far).

NADIS activities includes monitoring disease in cattle, sheep and pigs, knowledge transfer to vets and livestock industry, monthly reports published by 'UK Vet' and www.nadis.org.uk, bulletins supplied to regional and local agricultural press and main websites and reporting of veterinary surgeon records of all disease cases and preventive medicine work. Information from the participating veterinary practices and veterinary colleges is downloaded onto a central data base every two weeks to ensure that information is up to date and relevant to the current situation on farm. The UK is also divided into 10 different weather regions to make climatic related information more relevant on a local level.

The resources produced by NADIS can play an important role in animal health and welfare planning. They can collect quantities of animal health data (albeit on a regional basis) that would be impossible to collect and analyse on an individual farm level. This type of data is particularly useful for individual farmers to benchmark their own animal health performance against others, in order to be able to identify areas for improvement. Forecasting data, particularly for parasites, can also be useful for devising control strategies. The NADIS website also provides useful information on various diseases and conditions and therefore can be a useful resource for farmers and advisors.

4.4 European perspective

4.4.1 European Commission

Following a wide-ranging evaluation and consultation process the European Commission has produced "A new Animal Health Strategy for the European Union (2007-13) "Where prevention is better than cure"⁴⁰.

Animal health and welfare planning is not specifically mentioned in the draft strategy, however, some issues, such as bio-security and disease monitoring and surveillance that could be addressed in a health planning context are covered. Very little mention is made of policies aimed specifically at farmers to improve health and welfare of animals. The exception to this is the statement made on bio-security: "Successful bio-security measures must address isolation of new animals brought to the farm, isolation of sick animals, regulation of the movement of people, animals, and equipment, and procedures for cleaning and disinfecting facilities. This responsibility lies with the animal owners" (EC, 2007).

⁴⁰ EC (2007) A new Animal Health Strategy for the European Union (2007-2013) where "Prevention is better than cure". Office for Official Publications of the European Communities, Luxembourg.

4.4.2 Norway

Henriksen (2004)⁴¹ reports on a Norwegian Agricultural Authority funded advisory and development project entitled "Good animal welfare in organic farming". The project involved dairy farmers and advisors associated with the TINE BA dairy cooperative and utilised their existing group counselling systems and activities in the Norwegian Cattle Health Service. The Norwegian Cattle Health Service has had a health card recording system in place since 1976, where production data, disease and treatment information must be recorded and The Norwegian Dairy Herd Recording Systems records information about milk yield, fodder, breed etc. There has been no formalised animal health planning requirement in the Norwegian dairy industry however, and one of the key outcomes of the project was to develop a template for a health and welfare plan for organic dairy farms and provide appropriate training and advice to encourage uptake and use of health and welfare planning. A check list for welfare assessment (including animal based parameters and a farmer questionnaire) to assist organic inspectors was also developed. No mention is made by Henriksen (2004) of the animal health and welfare planning principles or content of the proposed template.

4.4.3 Germany

In Germany there is very little in way of formal animal health and welfare planning on farms and that which has been done is mostly associated with research projects. Link (2006)⁴² describes a project launched by the Federal Program for Organic Farming called 'Implementing animal health and welfare in organic husbandry'. The project was divided by species into dairy cows, breeding sows and laying hens, with each section managed by one of the participating research institutes (The University of Kassel, Witzenhausen, the University of Goettingen, the Institute of Organic Farming, Trenthorst and the Bioland[®]). In the first stage of the project, checklists were developed and tested to evaluate the animal welfare situation on farms. For each species, 20 to 30 organic farms were selected and evaluated. It was then proposed that when these evaluations had been analysed, animal health plans for each farm would be developed to help them improve their animal welfare situation. No mention is made as to the required content of the animal health plans or the principles on which they would be based.

4.4.4 Switzerland

In Switzerland, animal health and welfare planning as a concept does not exist in either the organic or conventional livestock sectors, however, standards of animal welfare are high because of strict welfare laws and direct support payments through agri-environmental schemes for promoting animal welfare (OECD, 2007)⁴³.

⁴¹ Henriksen, B. (2004) Development of an advisory system that supports good animal welfare in organic milk production in Norway. In: Hovi, A. Sundrum and S. Padel (eds) Organic livestock farming: potential and limitations of husbandry practice to secure animal health and welfare and food quality. Proceedings of the 2nd SAFO Workshop 25-27 March 2004, Witzenhausen, Germany.

⁴² Link, M. (2006) Improving animal health and welfare in Germany. In: C. Rymer, M. Vaarst and S. Padel (eds), Future perspective for animal health on organic farms: main findings, conclusions and recommendations from SAFO Network, Proceedings of the 5th SAFO Workshop 1 June 2006, Odense, Denmark.

⁴³ OECD (2007) Switzerland – Agricultural Policies in OECD Countries: Monitoring and Evaluation 2007. Viewed on <http://www.oecd.org/dataoecd/14/1/39579771.pdf> (17 December 2007)

According to the BioSuisse regulation on organic agriculture, animal health on organic farms should be achieved primarily by preventative measures rather than the traditional veterinary approach (particularly in the area of udder health and milk quality) of treatment (mostly with antibiotics) of sick animals (Heil et al., 2006)⁴⁴. The Pro-Q project "Promoting and maintaining bio-milk quality in Switzerland by prevention and minimization of antibiotics" (Heil et al., 2006) was started to promote to try and achieve this in the organic dairy sector. Farmers, in conjunction with their vets, were required to collect data on the current state of udder health (including milk quality and physical characteristics) and then develop a plan of complementary therapy treatment and changes to management practices to improve udder health and reduce the use of antibiotics. Additionally, farmers were provided with advice and support on health and welfare planning via the internet (web based information services), advisory groups and expert meetings. A database system was also developed to process the health data collected. The main barriers to increased animal health and welfare planning were identified as lack of veterinary expertise and interest and the cost and administrative burden to farmers.

4.4.5 Austria

No formalised animal health and welfare planning is undertaken in Austria. The Austrian Animal Health Service, which has been in place in Austria for 2 years, simply enables a check list type approach to animal health and welfare on the farm and does not allow for planning and the development of actions to improve animal health and welfare.

4.4.6 Holland

As with Germany, Switzerland and Austria there are no formal animal health and welfare planning requirements in Holland. However, the KKM (milk quality programme) initiated in Holland in 1998 is compulsory for all dairy farmers and part of this scheme involves periodic farm visits by veterinarians. These visits usually involve the vet simply identifying health problems in the herd visually rather than investigating health records and developing a preventative health management strategy (Smolders, pers comm.).

4.4.7 Denmark

There is no existing formalised animal health and welfare planning for organic farming in Denmark; however, there are a number of initiatives in place that could support this type of activity. There is an existing veterinary advisory service for conventional dairy herds that could provide a health planning service. At present, however, the focus of this service is usually on immediate improvements in disease prevention rather than longer term animal health promotion. Since 2000, the organisation "Organic Denmark" has offered its members a Farm Development Plan service. There is no specific focus on animal health and welfare, however, farmers can articulate animal health and welfare improvement as a goal and work with advisors to integrate this goal in the whole farm planning process. Between 1999

⁴⁴ Heil, Fritz, Ivemeyer, Silvia; Klocke, Peter; Notz, Christophe; Mäschi, Ariane; Schneider, Claudia; Spranger, Jörg und Walkenhorst, Michael (2006) [pro-Q: Förderung der Qualität biologisch erzeugter Milch in der Schweiz durch Prävention und Antibiotikaminimierung. Abschlussbericht Mai 2003 bis April 2006](#) [pro Q: Promotion of the quality of organically produced milk in Switzerland through prevention and minimisation of antibiotics. Final report May 2003 to April 2006]. Bericht, Forschungsinstitut für biologischen Landbau FiBL, CH-Frick.

and 2001 a 2 year action research project took place in Denmark where animal health advisory service contracts were developed for a sample of organic farmers using three different models (theme oriented health planning, close herd monitoring and continuous process and analysis). None of these models were particularly effective from an animal health and welfare planning perspective. More recently, the concept of Danish Stable Schools (Vaarst et al, 2007)⁴⁵ has been used in relation to animal health and welfare improvement on organic dairy farms and this technique may be useful for increasing the level of formal animal health and welfare planning that takes place in Danish dairy herds.

4.5 International Perspective

4.5.1 OIE – World Organisation for Animal Health

A number of codes of practice for animal health for both terrestrial and aquatic animals have been developed by the OIE. The aim is to assure the sanitary safety of international trade in terrestrial animals (mammals, birds and bees) and aquatic animals (fish, molluscs and crustaceans), and their products. This assurance is achieved through the detailing of health measures to be used by the veterinary services or other competent authorities of importing and exporting countries in establishing health regulations for the safe importation of animals and animal products. Such measures aim to avoid the transfer of agents pathogenic for animals and/or humans, without the imposition of unjustified trade restrictions.

No specific mention of animal health and welfare planning is made in either of these codes - there is, however a great deal of emphasis on risk analysis, bio-security, recommendations on specific diseases and hygiene and testing procedures.

5 Animal health and welfare planning principles

An analysis of the health and welfare principles mentioned by the 15 organisations (Appendix 1) outlined in Section 2 was undertaken. These organisations were identified as some of the key players in promoting and encouraging health and welfare planning in the UK and to a lesser extent Europe. The principles were identified from websites, published documents and quality assurance and organic certification regulations.

The analysis of the principles of health and welfare planning indicates that there are around 14 key principles (Table 1) that arise across the sets of principles studied, however, some are more common than others and there appear to be differences in emphasis between organic and conventional health and welfare plans. For example, veterinary involvement being a requirement (or recommended), aiming to reduce the use of veterinary medicines and encouraging the use of preventative management and husbandry are more prevalent, by proportion, in the organic health and welfare principle sets. Other principles such as bio-security and mitigation of risk, analysis and review of collected data, describing routine husbandry practices and the use of preventative medicines such as vaccination (all of which were not mentioned in the

⁴⁵ Vaarst, M., Nissen, T.B., Ostergaard, S., Klaas, I.C., Bennedsgaard, T.W. and J. Christensen (2007) Danish Stable Schools for Experimental Common Learning in Groups of Organic Dairy Farmers. *American Journal of Dairy Science* **90** (5), 2543-2554.

organic documents studied) and explicitly addressing animal welfare were more prevalent, by proportion, when all 15 sets of principles were analysed (organic and conventional).

Table 1. Key principles of animal health and welfare planning identified from a total of 15 bodies that have requirements for animal health and welfare planning (5 of which were organic specific, 4 UK and 1 Swiss))

Code	Principle	Frequency (out of 15 sets of health planning principles, including organic)	Frequency (out of 5 UK organic certification bodies)
A	Identification of current disease status and potential risks	10	4
B	Evaluation of current situation/risks (also prioritisation in some cases)	5	1
C	Develop strategies to deal with current situation or to prevent potential disease problems	10	4
D	Bio-security and mitigation of risk	4	0
E	Monitoring through data recording	8	3
F	Analysis and or review of collected data	7	2
G	Veterinary involvement a requirement or recommended	5	3
H	Aim to reduce the use of veterinary medicine (or encourage the use of alternative therapies)	5	4
I	Explicitly addresses animal welfare	3	0
J	Describe the use of veterinary medicines and treatments	6	2
K	Encouraging use of preventative management and husbandry	6	3
L	Describe routine husbandry practices.	2	0
M	Preventative medicine use (including vaccinations)	2	0
N	Must be available to all staff who work with the livestock.	2	1

Additional key principles mentioned by individual organisations included:

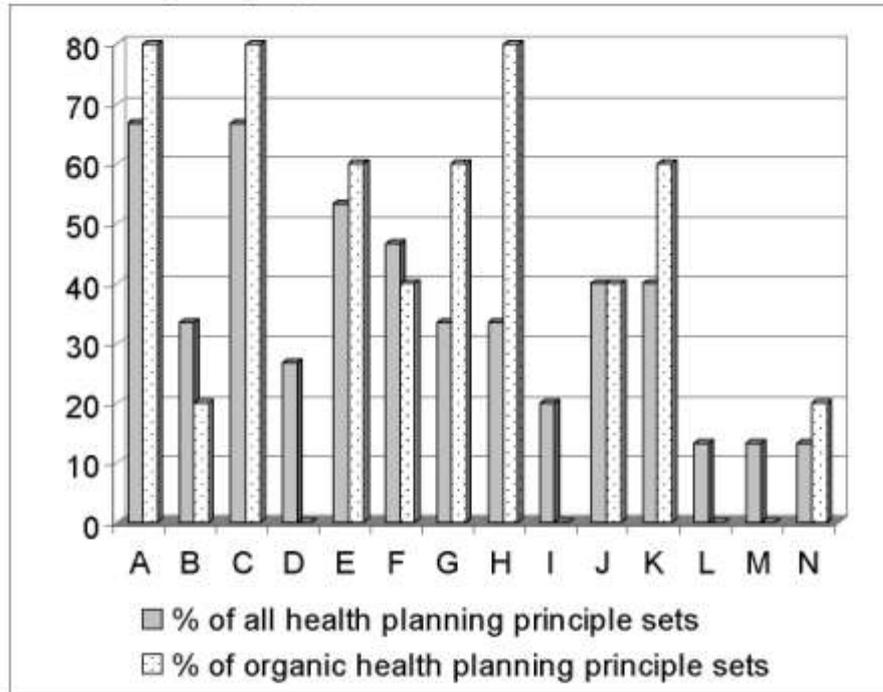
- The specified withdrawal periods for the treatments and the longer withdrawal periods required in the standards (Organic Farmers and Growers Standards).
- The necessary mineral and vitamin supplements needed to maintain health (Organic Farmers and Growers Standards).
- Stockmanship of a high quality is crucial for successful identification of potential problems (RSPCA Freedom Foods Standards).

It should be remembered that this is an analysis of the main principles of health and welfare planning proposed by various bodies, it is not an in depth analysis of the best practice or standards documents themselves as it would require considerably more time and resource to do so. These documents may in fact contain further requirements related to the key principles identified above.

Restricted use of veterinary medicines is one of the practices that distinguishes organic livestock production from conventional, therefore, it is unsurprising that reducing the use of veterinary medicines is a more important key principles in the organic sets of health planning principles (Figure 1). Complementary to that principle is the use of preventative management and husbandry to prevent ill health occurring in the first place. The Compendium of UK Organic Standards (the minimum requirement for organic certification in the UK) recommends that animal health plans

be drawn up with the help of a vet, therefore each of the UK certification bodies also include this principle. Of the four most common principles across all 15 sets of principles (bio-security and mitigation of risk, analysis and review of collected data, describing routine husbandry practices and the use of preventative medicines such as vaccination and explicitly addressing animal welfare), three are highly relevant to the organic livestock sector as well. The exception perhaps being the description of routine preventative medicine use, given that the prophylactic use of veterinary medicines is unacceptable in organic production.

Figure 1. % of sets of animal health and welfare planning principles that make specific mention of the key health principles identified in Table 1 above.



Of concern, is the lack of a requirement in the organic health planning principles to analyse and review recorded health data. This was one of the key shortcomings of UK style health planning identified in studies by Huxley et al (2003a)⁴⁶, Sibley (2000)⁴⁷ and Bell et al. (2006)⁴⁸ that reduced the effectiveness of health planning to improve health and welfare on farms. If data recorded are not reviewed or analysed the farmer and vet cannot get an accurate picture of the current state of health and welfare in the herd, where potential problems may lie, and whether the strategies

⁴⁶ Huxley, J.N., Burke, J., Roderick, S., Main, D.C.J., Whay, H.R. (2003a) Herd Health and Welfare Benchmarking on Organic Dairy Farms in South-West England. *Cattle Practice* **2**(4), 331-333.

⁴⁷ Sibley, R. J. (2000) Planning health care on dairy farms. *In Practice* **22**, 405-407.

⁴⁸ Bell, N.J., Main, D.C.J, Whay, H.R., Knowles, T.G., Bell, M.J., Webster, A.J.F. (2006) Herd health planning: farmers perceptions in relation to lameness and mastitis. *Veterinary Record* **159**, 699-705.

being implemented to deal with health problems are effective or not. Possible ways of encouraging farmers to increase analysis and review of health data, including the use of benchmarking, are discussed further in Section 6.

The lack of farm bio-security as a key principle of health and welfare in the organic sets of principles is also of concern. One of the most fundamental ways of preventing disease in animals is to prevent disease organisms coming on the farm in the first place.

The financial aspects of animal health and welfare planning were highlighted by a sample of UK sheep producers as being a key principle of importance to them (NSA, 2006). This was not mentioned, however, in any of the 15 sets of principles analysed in this document.

It is clear that there is considerable variation between sets of health and welfare planning principles from the organisations studied and that the organic and conventional principles do differ in their emphasis. Of key concern, however, is the lack of reference in some sets of principles, particularly the organic ones, to fundamental issues in health and welfare planning, for example the analysis and review of health and welfare data to gauge the situation over time.

5.1 ANIPLAN Workshop development of health planning principles

At the first ANIPLAN Workshop held in Denmark on 9th-12th October 2007, participants from the 7 partner countries were asked to identify what they thought were the key principles of animal health and welfare planning. Participants worked in small groups and then after plenary discussion, a consensus was reached on 8 key principles which are listed below.

ANIPLAN Partner animal health and welfare planning principles:

- Continuous development and improvement
 - Identify current status and risks (using animal and resource based parameters)
 - Evaluation and target setting
 - Promotive, preventative and responsive strategies and action
 - Review
- Farm specific
- Farmer ownership (setting targets, accounting for aspirations, setting planning agendas)
- External person(s) should be involved (to provide unbiased advice/support)
- External knowledge
- Within framework of organic principles (systems approach)
- Written documentation
- Acknowledge existing positive aspects of health and welfare also

If these principles are contrasted with those derived from the literature (Table 1.), there is considerable overlap of principles. In particular, identification of current disease status and potential risks, evaluation of current situation, strategies for dealing with problems and analysis and review of situation are clearly represented in both sets of principles. However, monitoring is not explicitly mentioned in the ANIPLAN principles, though the collection of animal and resource based parameters to identify the current situation is stated. Veterinary involvement in the health

planning process is recommended or required in the principles derived from the literature (Table 1), however, in the ANIPLAN principles, this is broadened to an external person (could be a vet or an animal nutritionist for example) to provide unbiased advice and support and also external knowledge – which could come in the form of computer simulation models, feed planning packages, animal disease databases etc. Other principles derived from the literature such as aiming to reduce veterinary medicines, explicitly addressing animal welfare and encouraging the use of preventative management and husbandry all fall within the ANIPLAN principle of “within the framework of organic principles” – referring here to the principles of organic agriculture as defined by IFOAM⁴⁹ and within EU Regulation EC2092/91⁵⁰ and the organic livestock amendment EC1804/99⁵¹. Principles identified from the literature but not included in the ANIPLAN principles include describing routine husbandry practices and preventative medicine use – however these tended to be more commonly associated with conventional health and welfare planning than organic (Table 1). Another that wasn't addressed in the ANIPLAN principles was that the health and welfare plan must be available to all staff who work with livestock on a farm. This is covered to some extent by the ANIPLAN principle of “farmer ownership”.

The principles identified by the ANIPLAN partners will form the foundation of any health and welfare planning that is developed and used as part of the research carried out in this project. Defining a set of principles on which to base health and welfare planning rather than developing a set health and welfare planning template, means that ANIPLAN partners all have a common understanding of what is meant by animal health and welfare planning in the project, but have the flexibility to adapt the health planning process to suit an individual countries conditions and specific requirements.

6 Attitudes towards health planning

Most dairy farms in the UK have had to implement a herd health plan as a prerequisite of all dairy farm quality assurance schemes (e.g. NDFAS⁵², see section 3.2.1 above). All organic dairy farms need an animal health and welfare plan as a compulsory part of organic certification. A good health plan should consist of many of the principles outlined in Section 3 and bring together information about the farm, the animals and the management systems being applied to both. It should identify current and potential health and welfare problems (based on herd health data), strategies for their management and prevention, monitoring of implemented strategies and as a minimum, annual review to identify progress. However, the actual health planning process carried out on farms varies significantly and

⁴⁹ IFOAM (2005) Principles of Organic Agriculture. International Federation of Organic Agriculture Movements. Bonn.

⁵⁰ EC (1991) “Council Regulation (EEC) No 2092/91 of 24 June 1991 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs”. Official Journal of the European Communities L198 (22.7.91): 1-15.

⁵¹ EC (1999) “Council Regulation (EC) No 1804/1999 of 19 July 1999 supplementing Regulation (EEC) No. 2092/91 on organic crop production of agricultural products and indications referring thereto on agricultural products and foodstuffs to include livestock production”. Official Journal of the European Communities L222 (24.8.99): 1-28.

⁵² NDFAS standards: <http://www.ndfas.org.uk/>

subsequently so does the effectiveness of health planning as a tool to improve animal health and welfare. Studies by Huxley et al. (2003a)⁵³ and Bell et al. (2006)⁵⁴ looked at dairy farmers' perceptions and use of herd health plans. Huxley et al. (2003a) studied 15 organic dairy farms in South-West England, all with herd health plans. Of the 15, only 10 had health plans that were developed with the assistance of a vet, one with the help of an advisor and 4 on their own without external advice. Health plans had been in place on the farms for between 2 and 48 months. Opinions on health plans were varied. Positive comments included: "Makes you think, question what you are doing, look for options", "Makes you look at figures", "Document to refer to, makes you think about animal health". Negative comments also arose however, including: "Waste of space, fill it in, don't look at it", "Just more paper work", "There because you have to have them", "Time spent better doing job rather than writing down on paper". In the Bell et al. (2006) study, 58 dairy farmers from south-west England, the Midlands and Wales, UK were interviewed on aspects of health planning, health recording, health problems, control measures and their own opinions on herd health planning. 50% of the 236 comments (from 50 of the farmers) indicated that health planning was a disadvantage to the farm (Bell et al., 2006). Forty-nine comments from 43 farmers indicated a direct benefit to someone else, such as the milk purchaser, supermarket, or general public and only sixty nine comments from 43 farmers indicated a direct benefit to the farm. Farmers' attitudes towards the plans were not found to be associated with the type of plan used, the quality of the plans, and the quality of the records or the extent of their record review (Bell et al., 2006). Nor were they related to the level of perceived health problem on the farm or the measures they took to deal with them. Both studies (Bell et al., 2006 and Huxley et al., 2003a) indicate that farmers are generally not happy that the health planning is a worthwhile exercise to improve animal health and welfare in their herds and they only undertake the process due to farm assurance and organic certification requirements. There are farmers out there however, who are finding health planning a useful process (as indicated in the studies) so there must be shortcomings in the health plan implementation process used by many farmers.

In 2006 the National Sheep Association undertook, on behalf of DEFRA, an investigation into the attitude towards farm (flock) health plans and planning within the various parts of the English sheep industry in both the lowlands and uplands⁵⁵. The main focus was to gather the thoughts of commercial producers. By trying to extract their thoughts and feelings on how they could improve the health and welfare of the sheep under their care, it was hoped that means could be found for help to be given which would not only achieve this but also add to their financial returns as a result.

Farm visits (NSA, 2006) revealed a clear distinction between farm health plans and farm health planning. A large amount of time and effort went into planning how to improve the health and welfare of their sheep flock (e.g. by developing vaccination programmes) but this planning did not manifest itself as a flock health plan in the vast majority of cases as little or no value was seen in this. The farm health plan was

⁵³ Huxley, J.N., Burke, J., Roderick, S., Main, D.C.J., Whay, H.R. (2003a) Herd Health and Welfare Benchmarking on Organic Dairy Farms in South-West England. *Cattle Practice* 2(4), 331-333.

⁵⁴ Bell, N.J., Main, D.C.J., Whay, H.R., Knowles, T.G., Bell, M.J., Webster, A.J.F. (2006) Herd health planning: farmers perceptions in relation to lameness and mastitis. *Veterinary Record* 159, 699-705.

⁵⁵ National Sheep Association (2006) National Sheep Association investigation into attitudes towards farm health planning in the English sheep sector. National Sheep Association, UK.

viewed as a paper exercise for the benefit of someone else (e.g. quality assurance body). Whilst there was a lack of farmer interest in producing farm health plans, a definite thirst for information relating to animal health and welfare was apparent, with quite considerable amounts of time being spent on such activities. The main sources of information were the internet and through membership subscriptions to relevant colleges and institutions. This indicates that farmers are interested in improving the health and welfare of their animals, but perhaps formalised animal health planning requirements are the not the most appropriate means of achieving this.

Another interesting result of this study (NSA, 2006) was the difference in perceptions of animal health and welfare plans and planning between farmers and industry bodies. Industry tended to view the written health plans themselves as necessity, for cross-compliance (Scotland), quality assurance schemes and organic certification – but conceded that these documents need to be relatively simple and as long as they show a pro-active approach to improving health and welfare they tick the box as far as these schemes go. Industry bodies felt that engaging farmers in a manner where they can see the benefits of health and welfare planning (perhaps through showing them the financial benefits) rather than forcing them down the route of having to produce a formulated written health plan, would encourage further uptake of the health and welfare planning process.

Suggestions were made by the NSA (2006) that perhaps more lateral thinking is required on what health plans look like. By using a range of health planning tools that are designed well, appeal to farmers and can be used effectively for the benefit of the whole industry – then farmers are more likely to take them up. Suggestions made included laminated lambing cards giving tips on health and welfare during lambing, a directory of information sources (including veterinary and other qualified professionals) that can be a resource for farmers and interactive software that would allow question and answer sessions for individuals and have a scenario setting capability to assist with developing health and welfare management strategies. The NADIS website (see section 3.3.6) is a good example of an existing health planning tool that can be used by farmers and veterinarians to assist with the health planning process. Another example of an existing tool is DeSTVAC⁵⁶ which is a decision support tool developed by the University of Reading to identify appropriate vaccination usage on organic sheep and cattle farms.

It needs to be remembered the aim of health and welfare planning is to improve the health and welfare of farmed livestock – if farmers do not see written health plans as being useful then alternatives need to be identified to ensure farmer buy-in to health and welfare planning process.

7 Shortcomings of UK-style health and welfare planning

Alongside the questionnaire and subjective rating of the quality of the herd health plans (looking at the plan itself, not how it was implemented), Huxley et al. (2003a)⁵⁶ also carried out animal based health and welfare assessments on all 15 farms. There was found to be no link between the scores given for the quality of records kept and herd health planning and the overall results for the animal based health and welfare assessments (i.e. good quality record keeping and health plans did not necessarily result in a higher health and welfare score on the farm). There was also

⁵⁶ Hovi, M. (2003) Vaccine use in organic cattle and sheep systems: Development of a decision support tool based on risk assessment (<http://orgprints.org/6776/>)

no correlation between the length of time the plan had been in place and the health and welfare assessment score either. This suggests that on these farms herd health plans are not an effective tool for improving animal health and welfare.

The implementation of the health plan on the farm is the essential process that many farmers omit – many see it as a paper work/box ticking exercise to satisfy the quality assurance of organic certification requirements. Key to that successful implementation process is data collection and analysis to monitor progress and regular reviewing on of that data (Sibley, 2000)⁵⁷. In a study by Huxley et al. (2003a) of 15 organic dairy farmers who had animal health plans in place, only 14 said they reviewed their health records (only 9 did so on a regular basis) and of those 14 only 3 said they made review records and of those 3 none could produce documentary evidence of the review. In the study by Bell et al. (2006) described in the previous section, all the dairy farmers studied kept mastitis records (a legal requirement in the UK (The Welfare of Farmed Animals (England) Regulations 2000 (Anon, 2000)⁵⁸) and 95% of them kept lameness records (a NDFAS dairy farm assurance scheme requirement). However, even though this data was collected, only 38% of the farmers studied reviewed their records and like the Huxley et al. (2003a) study, very few (5%) of these reviews were comprehensive and retained for future reference. This lack of a written record of reviews is also a serious problem given that over time is very difficult for farmers to accurately remember herd health data which may result in an underestimate of a health or the farmer not picking up a deteriorating health situation over time.

Pocock (2004)⁵⁹ went as far as saying that there are serious short comings in health planning being an effective tool to deliver health and welfare assurance. The key problems he identified with the UK system of health planning were:

- There are no industry standards for the levels of health and welfare farmers should be striving for – a national strategy is needed to raise deficient farms to at least national average levels, and there is not saying that that is even a high enough standard.
- There is no system of quality control on the health planning activity, either from the veterinary side of the process or the farm assurance/organic certification side of the process – often to have a plan is enough, it does not necessarily have to be implemented successfully.
- The data recording system is not robust – there is not structured formal review of data required, much data is held on farm (where we see from Bell et al. (2006) and Huxley et al. (2003a) that very few farmers look at it) and again targets are not set for performance.
- There is no auditing and assessment process on health plans – again to have a plan is often enough for farm assurance and organic certification bodies. The implementation process needs should be audited however, and the outcomes of the health planning process assessed and preferably benchmarked against other similar farms or national averages.

⁵⁷ Sibley, R. J. (2000) Planning health care on dairy farms. *In Practice* **22**, 405-407.

⁵⁸ ANON (2000) The Welfare of Farmed Animals (England) Regulations 2000. London, HMSO.

⁵⁹ Pocock, B.W. (2004) Is Health Planning an Effective Tool to Deliver Health and Welfare Assurance? *Cattle Practice* **12**(1), 65-67.

- Training veterinary surgeons on animal health and welfare planning is required as this is a specialist area. Farmers and other advisors in the health planning process also need appropriate training and support.

These are all issues that need addressing if health planning in the UK is to be effective at improving the health and welfare of farmed livestock.

The use of animal health data benchmarking was mentioned in several studies as a possible means for motivating farmers to implement health plans properly (Huxley et al., 2004⁶⁰, Bell et al., 2006, Main, 2006). Benchmarking is the establishment of levels of specified conditions for the purpose of comparison between farms and can be used by farmers to identify areas of weakness on their farms in comparison to others (Huxley et al., 2004). This enables them to develop strategies to deal with that particular weakness. Benchmarking also has the added benefit of showing farmers what they could achieve by showing what the top percentage of farmers are achieving. Huxley et al. (2004) examined the response of producers to animal welfare assessment benchmarking reports and although many farmers identified problems and implemented management changes, the success of the interventions was variable. A key element in this study was that the source of advice given as to the type of intervention required was not controlled which highlights the importance of good quality advice following a benchmarking process. This reiterates Pocock's (2004) point that training in the area of animal health and welfare planning is required for vets, farmers and other advisory experts.

Health planning is a tool that can be used to assist in the active prevention and monitoring of health and welfare on farm and is flexible enough to allow for solutions to specific problems on specific farms. In the UK, however, these plans are undervalued and whilst animal health data is often collected it is often inaccurate (relying on farmers' memory rather than actual recording) and is frequently not analysed and reviewed over time. This results in farmers not being aware of problems on the farm or situations deteriorating over time. Benchmarking may raise awareness of how a farmer is performing in relation to his or her peers and hence motivate them to perform better, however the benchmarking process needs to be backed up with good technical advice. Work needs to be done by the livestock industry to develop some sort of quality control system for animal health plans which are required for quality assurance or organic certification. The health and welfare of animals will not be improved merely by having an animal health plan. Farmers need to be encouraged to implement the plan effectively and this is an area that may require more study.

8 Conclusions

The analysis of 15 sets of health and welfare planning principles derived from various UK government initiatives, organic certification bodies and livestock industry bodies resulted in the identification of 14 key principles. There were key differences between the organic and conventional sets of principles, primarily in relation to the use of veterinary medicines. There were also deficiencies apparent in some of the

⁶⁰ Huxley, J.N., Burke, J., Roderick, S., Main, D.C.J., Whay, H.R. (2004) Animal welfare assessment benchmarking as a tool for health and welfare planning in organic dairy herds. *Veterinary Record* **155**, 237-239.

sets of organic health and welfare planning principles, particularly the requirement to analyse and review data – an activity that is of importance in and planning process.

Attitudes towards health and welfare planning differed between farmers and industry bodies and a very clear distinction is apparent, especially in the farming community between health and welfare planning and health plans. Farmers feel that written health plans are of limited benefit to them but recognise that they do satisfy the requirements of government and industry bodies (e.g. for cross compliance, organic certification, quality assurance). Other shortcomings of the UK system of health and welfare planning were also identified including plans often being written but not effectively implemented, lack of analysis and review of collected health and welfare data, a lack of quality control in health planning systems and a lack of auditing to see if the health and welfare planning has been effectively implemented on the farm.

Given these findings there are several issues that need to be kept in mind when taking the ANIPLAN project forward:

- There are useful health and welfare planning principles from the conventional sector that should be applied to the organic sector
- The distinction needs to be made between health and welfare planning and health and welfare plans
- In order to ensure widespread farmer uptake of the health and welfare planning process, alternatives to written, formalised health plans need to be identified.
- Written health plans are a necessity for quality assurance and organic certification – where they are being used quality control and auditing measures need to be put in place to ensure they are fulfilling their requirements
- Benchmarking health and welfare data may be a useful way of encouraging farmers to plan their health and welfare management strategies.

Appendix 1 Key animal health and welfare planning principles identified from UK Government, organic certification and industry bodies.

Organisation	Key Principles
AH&W Strategy for Great Britain	<ul style="list-style-type: none"> • identification of risks of introduction and spread of disease and infections; • early recognition of disease; and • prioritising measures to control any existing problems and manage risks, including the responsible use of medicines. • preventing the introduction of endemic diseases or zoonoses and thus improving the productivity of the overall herd or flock; and • slowing or minimising the spread of disease from one farm to another during an exotic disease outbreak.
Positive Animal Health Action Plan (England)	<ul style="list-style-type: none"> • Early recognition and identification of diseases present at a holding; • Identification of the risks of introduction and spread of diseases and infections; • Putting in place measures to manage risks, and improve overall disease prevention and control. • A tool for identification of cost effective measures, which contributes to farm business planning.
Animal Health Planning Framework (Wales)	<ul style="list-style-type: none"> • Evaluation (assess performance and risks) • Mitigation (prevent risk) • Responding (make changes and set targets) • Monitoring (keep records) • Evaluation....
Animal Health and Welfare Management Plan (Scotland)	<ul style="list-style-type: none"> • Implement a proactive scheme for treating diseases, including guidance on following a vet's advice and treatment (compulsory) • Implement a scheme for using vaccines and preventative medicines (compulsory) • a summary of the annual discussion (assessment) with a vet, • outline of the agreed activities under any voluntary options the farmer wishes to take, although the detail may be given in other documents and finally • the Animal Health and Welfare Management Plan must be agreed, implemented and re-assessed with a vet on an annual basis.
Compendium of UK Organic Standards	<ul style="list-style-type: none"> • Aiming for "positive animal health and welfare" • Preferably drawn up with a vet • Must show development of a pattern of health building and disease control measures • Must allow for the evolution of a farming system progressively less dependent on allopathic veterinary medicinal products
Soil Association	<ul style="list-style-type: none"> • should provide a written strategy for the management of animal health to organic standards during the conversion period - and beyond

	<ul style="list-style-type: none"> • Producers are strongly advised to get advice from their veterinary surgeon in developing the plan • The animal health plan should be revised on a regular basis (at least once a year). • should also be updated (preferably with the vet) according to the progress or problems experienced. • All members of farm staff dealing with livestock should have access to and understand the animal health plan. • Identify all significant potential livestock pest and disease problems that may occur • Outline the methods of preventing their occurrence • Outline what treatments will be used should they occur and • Describe an approach to improvement of overall herd-health and reduction of reliance on veterinary treatments.
Organic Farmers and Growers	<ul style="list-style-type: none"> • plan must ensure the development of a pattern of health building and disease control measures appropriate to the particular circumstances of the individual farm and allow for the evolution of a farming system progressively less dependent on allopathic veterinary medicinal products • Identify the disease organism or health problem; • The management/husbandry practices that will be used to break the organism's life cycle and reduce the reliance on veterinary treatments; • The management/husbandry practices or alternative therapies that will be used to minimise or reduce the problem; • The selected veterinary medicines that will be used should the management practices not be successful; • The specified withdrawal periods for the treatments and the longer withdrawal periods required in the Standards; • The necessary vitamin and mineral supplements needed to maintain health; • Ongoing monitoring to ensure the effectiveness of the Plan and to update it as necessary. • The farmer can use the appropriate veterinary treatments, given the increased withdrawal time to minimise the suffering of animals but he must also look at how to prevent the need for such treatments in the future.
Scottish Organic Producers Association	<p>Describe present management.</p> <ul style="list-style-type: none"> • Describe how this management is to be re –evaluated, justified and modified in the developing organic system • Examine what disease is present or can be anticipated. What evidence has been taken into consideration in developing the present system. • Identify those areas that may need to change under organic management or require additional veterinary investigation.
The National Dairy Farm Assured Scheme (NDFAS)	<ul style="list-style-type: none"> • chronicle the incidence of specific health conditions and reflect prevalence by assessing progress of each condition over time

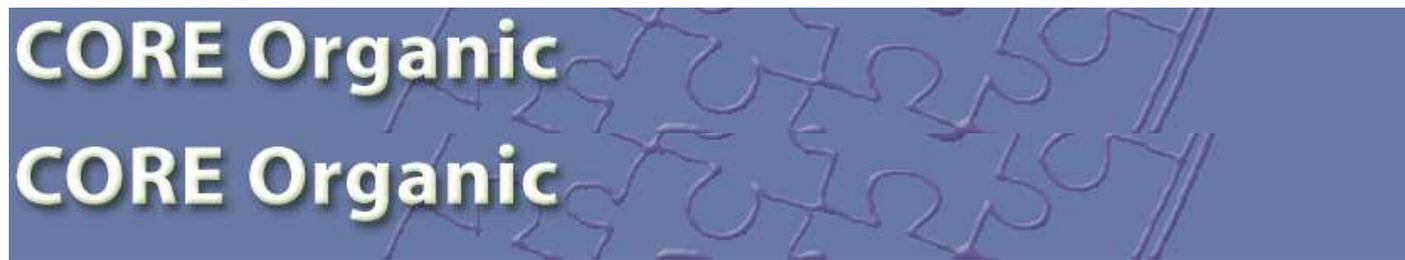
	<ul style="list-style-type: none"> • assurance that health and welfare are being monitored and addressed with specific protocols and records reviewed at least annually for routine and preventative care • The health plan can be developed with the help of models or templates provided by various agencies • the plan must be structured for each individual farm recommended that plan be discussed and agreed with a veterinary surgeon • available to all farm staff who have responsibility for the animals • The herd health plan must be reviewed annually. • Detailed records lameness, mastitis, fertility, reproductive disorders and calving problems, metabolic disorders, calf diseases, other diseases and conditions.
RSPCA	<p>Basic disease control measures</p> <ul style="list-style-type: none"> • Where possible, the emphasis should be to control disease by using management and husbandry techniques rather than relying totally on routine medicinal therapies. <p>Herd security against infectious disease</p> <ul style="list-style-type: none"> • maintaining a closed herd whenever possible • Other measures include: quarantine, disposal of clinical waste, storage of medicines, zoonoses and notifiable diseases. <p>Monitoring and control of disease present on the farm</p> <ul style="list-style-type: none"> • records kept for herd performance including: production diseases, infectious diseases, and injury as a result of housing/husbandry • objective must be to use the records as part of a preventative medicine policy, as well as being used as part of the daily management of the unit to help evaluate the health/welfare status of the herd • all treatments administered, their success, and any withdrawal period should also be recorded • the recording of births, deaths, movements and medicine use is a legal requirement. <p>Disease surveillance</p> <ul style="list-style-type: none"> • prompt identification of disease problems before they become serious. • Stockmanship of a high quality is crucial for successful identification of potential problems. • Appropriate examinations and laboratory tests (where necessary) allow getting an early warning of disease.
Assured British Meat Standards	<ul style="list-style-type: none"> • A written herd/flock health plan must be established, implemented and reviewed at least annually or more frequently in the event of any substantial changes to husbandry practices • Producers are encouraged to seek veterinary advice in preparing the plan • Early recognition and identification of diseases present at a holding;

	<ul style="list-style-type: none"> • Identification of the risks of introduction and spread of diseases and infections; • Putting in place measures to manage risks, and improve overall disease prevention and control. • A tool for identification of cost effective measures, which contributes to farm business planning. <p>Must cover areas of:</p> <ul style="list-style-type: none"> • farm bio-security, • vaccinations, • parasite control, • routine management procedures and • veterinary operations.
Assured Chicken Production standards	<ul style="list-style-type: none"> • tailor made health and welfare programme for specific farm • strategies for prevention and control of diseases • outline of health and husbandry procedures of whole production cycle • annual review
Norwegian Cattle Health Service	production data, disease and treatment information recorded
The Norwegian Dairy Herd Recording System	information about milk yield, fodder, breed etc
BioSuisse – ProQ Project	<ul style="list-style-type: none"> • collect data on the current state of udder health (including milk quality and physical characteristics) • develop a plan of complementary therapy treatment and changes to management practices to improve udder health and reduce the use of antibiotics • database system used in conjunction to process the health data

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Minimising medicine use in organic dairy herds through animal health and welfare planning

'Minimising medicine use in organic dairy herds through animal health and welfare planning', ANIPLAN, is a CORE-Organic project which was initiated in June 2007. The main aim of the project is to investigate active and well planned animal health and welfare promotion and disease prevention as a means of minimising medicine use in organic dairy herds. This aim will be met through the development of animal health and welfare planning principles for organic dairy farms under diverse conditions based on an evaluation of current experiences. This also includes application of animal health and welfare assessment across Europe. In order to bring this into practice the project also aims at developing guidelines for communication about animal health and welfare promotion in different settings, for example, as part of existing animal health advisory services or farmer groups such as the Danish Stable School system and the Dutch network programme. The project is divided into the following five work packages, four of which comprise research activities with the other focused on coordination and knowledge transfer, through meetings, workshops and publications. These proceedings represent our first results in terms of presented papers and discussions at our first project workshop in Hellevad Vandmølle as well as a review of Animal Health Planning in UK.

The content of the workshop proceedings reflect the aim and starting points of all work packages, both in terms of analyses prior to the workshop, and developments during the workshop emanating from group work. Besides a general introduction to the project and the ideas of the project, Christoph Winckler provides an overview of the use of animal based parameters based on the results of the WelfareQuality project. Christopher Atkinson and Madeleine Neale presented concepts, principles and the practicalities of Animal Health Planning and Animal Health Plans based on UK experiences. Pip Nicholas from The University of Wales, Aberystwyth produced a report reviewing the current use of animal health and welfare planning. The entire document is included in these workshop proceedings. This was supplemented through presentations from all countries regarding animal health and welfare planning processes and research. These are summarised together with the concepts developed through dialogue at the workshop in the paper by Nicholas, Vaarst and Roderick. Finally, the Danish Stable School principles were presented by Mette Vaarst followed by discussion on different approaches of communication in farmer groups and at the individual level between farmers and advisors.

One important outcome from this workshop is a set of preliminary principles for a good health planning process. We concluded through group discussions followed by a plenary session that a health planning process should aim at continuous development and improvement, and should incorporate health promotion and disease handling, based on a strategy where the current situation is evaluated and form basis for action, which is then reviewed in a new evaluation. It is important that any health plan is farm specific and based on farmer ownership, although an external person(s) should be involved, as well as external knowledge. The organic principles should form the framework for any action (meaning that a systems approach is needed), and the plan should be written. The good and positive aspects on each farm – things that other farmers potentially can learn from. The work and studies in dairy farms within the project will be based on these principles and comprise evaluation and review using animal based parameters as well as finding ways of communication with farmers about animal health and welfare.

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