Animal Health and Welfare Planning in Organic Dairy Cattle Farms

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Abstract: Continuous development is needed within the farm to reach the goal of good animal health and welfare in organic livestock farming. The very different conditions between countries call for models that are relevant for different farming types and can be integrated into local practice and be relevant for each type of farming context. This article reviews frameworks, principles and practices for animal health and welfare planning which are relevant for organic livestock farming. This review is based on preliminary analyses carried out within a European project (acronym ANIPLAN) with participants from seven countries. The process begins with gathering knowledge about the current status within a given herd as background for making decisions and planning future improvements as well as evaluating already implemented improvements. Respectful communication between the owner of the herd and other farmers as well as animal health and welfare professionals (veterinarians and advisors) is paramount. This paper provides an overview of some current animal health and welfare planning initiatives and explains the principles of animal health and welfare planning which are being implemented in ANIPLAN partner countries, in collaboration with groups of organic farmers and organisations.

Keywords: Organic dairy farming, animal health and welfare planning, minimising medicine use, farmer groups, advisory service.

INTRODUCTION

One of the important goals in organic livestock farming is to ensure good animal health and welfare. Good animal health and welfare (AHW) will lead to a reduction in the need for veterinary medicine. Therefore, ideally, if organic farms live up to the goal of having a good animal health and welfare status, the need for veterinary medical treatment will also be reduced, which is also in accordance with the organic principles, where the use of all other synthetic chemicals is generally prohibited.

Key values in the understanding of animal health and welfare in organic herds are naturalness [1-4], human care and intervention in situations of risk [5]. This means that the farmer must create conditions for farm animals, which should allow them to perform certain natural behaviours and to live as natural a life as possible within the human controlled environment. At the same time, he/she must intervene when there is evidence of disharmony in the

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animal or the herd. The concepts of "positive health and welfare" are incorporated in EU Regulation 834/2007 on organic production. This mutual relationship between seeing animals as important part of a farm, and at the same time as living individual sentient beings calling for care and humane treatment is addressed by Appleby [6], who links the necessity of treating farm animals in a humane way directly to the concept of sustainability of farming: '… *humaneness to animals is an important, positive aspect of sustainable animal and mixed farming and, equally, that aspects of sustainability such as ecological context are an important approach to humane treatment of farm animals'* [6].

Based on several articles and workshop papers, two EU network projects, "Network for Animal Health and Welfare in Organic Agriculture (NAHWOA) and "Sustaining Animal Health and Welfare in Organic Farming" (SAFO; both networks can be reached on http://www.safonetwork.org) concluded that high levels of animal health and welfare are not guaranteed simply by farming to organic standards. The goal of maintaining a good animal health and welfare status in the herds is, in other words, not always fulfilled, and not all farmers manage the animals sufficiently well, even when they are living in a good environment. Several authors have shown that the behaviour, attitudes and choices of stock persons influence the animal health and welfare. Rouha-Mülleder and co-authors [7] showed for example how management decisions and the human-animal relationship influenced the prevalence of lameness in Austrian cubicle loose-housed dairy cows. Lack of appropriate education and awareness among farmers and advisors was regarded a major reason for this.

Therefore, both networks recommended the implementation of individual animal health plans to encourage organic farmers to be more active in working towards improving animal health and welfare and disease prevention.

Health plans may enable farmers to achieve disease reduction goals through the systematic setting of health targets and specific plans for how to reach these. In European countries, various animal health advisory service and animal health planning concepts have been developed.

A project team working at the CORE Organic funded project entitled 'Minimising medicine use in organic dairy herds through animal health and welfare planning' (ANIPLAN; http://aniplan.coreportal.org) has the main aim to investigate how active and well planned animal health and welfare promotion and disease prevention can contribute to minimising medicine use in organic dairy herds. The project aims at incorporating existing health and welfare planning initiatives which involved either communication in farmer discussion or self-help groups (e.g. the Danish so-called 'Stable Schools' [8] or Dutch 'Caring Dairy' [9]), or in a dialogue between an advisor and the farmer (e.g. ProQ in Switzerland [10]). Animal based assessment was used both as a tool for communication with the farmer regarding the situation on a farm, as well as a tool to assess the effectiveness of the health planning strategies on approximately 100 dairy farms visited at least twice across the 7 partner countries.

The aim of this paper is to present and discuss current strategies and practices for animal health and welfare planning in organic dairy farming focussing on the planning process. In addition, we discuss aspects which potentially increase the chances of health and welfare planning being successful and actively contributing to health and welfare promotion.

REVIEW AND DISCUSSION

Formalised Animal Health Plans

Formalised approaches to livestock health improvement and management exist in several countries. Compliance checklists such as by the TGD service in Austria can be regarded a minimum version covering various aspects of the livestock system (e.g. housing, feeding, disease levels), which point to issues that should be addressed. To varying degrees, this checklist can be supplemented with advice and planning for improvements. Often the local veterinarian is involved in the process of assessing the farm, talking to the farmer and making some form of written plan. However, the level of dialogue between advisor and farmer can vary greatly concerning both current status and how any planned action should be carried out in practice. Various forms of animal health plans exist in UK and these can be detailed documents dealing with all aspects of the farm with notes on the remedial or routine actions required by the farmer. Nicholas and Jasinka [11] analysed the requirements of health planning agreements practised within 15 different British organisations. All covered assessment and monitoring of health status, risk of disease, development of disease prevention strategies and management, in combination with other aspects such as analysis of collected data or encouraging the use of alternative medicine.

Clearly, an animal health plan aims at contributing to improvements on the farm and in the herd through active disease prevention and the monitoring of health and welfare as well as finding farm specific solutions to farm specific problems. In this context the quality of the dialogue involving the farmer as well as a sense of ownership over the process would appear crucial for the success of the plan rather than the size or comprehensiveness of the document.

In European farming in general, the amount of bureaucracy related administration that a farmer has to deal with has increased dramatically over the past decades, particularly with regards to record keeping, quality control, subsidies and legislative requirements. In some cases this can be a significant distraction to the practical aspects of farming. With regard to the application of animal health plan in Britain, many farmers do not value existing health plans, and the assessments on which they are based can be of poor quality [12-14]. Furthermore, a link is often not apparent between the plan and the advice or communication from advisors. In support of this, Atkinson & Neale [15] stated that large and complicated documents (as 'plans' often are) are often not used. Nicholas & Jasinka [11] also mentioned studies in the UK showing that farm records were rarely reviewed in relation to an animal health and welfare plan, even when recorded. Pocock [16] called for a quality control of the health planning activity, because 'to have the plan is not enough'.

Distinction Between Animal Health Plans and Animal Health (and Welfare) Planning

The statements above emphasise the importance of the planning process, upon which 'the plan' is based. Atkinson & Neale [15] also state that '*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'*. They describe the continuous process which should result in better animal health and welfare, involving agreed action and follow-up.

Atkinson and Neale [15] furthermore describe health planning as the process in which a health plan is formulated with four distinct stages: 1) Protocols (current treatment and prevention policy); 2) Records (e.g. disease incidence or number of treatments); 3) Review (target and intervention levels); and 4) Action: making the plan based on the review.

When emphasising animal health and welfare planning as a process, the follow-up is a fundamental part of the circle of reflection and it facilitates that some learning takes place for all the persons involved.

Nicholas and co-authors [17] describe the animal health and welfare planning process which is being used in the ANIPLAN project. This consists of the following stages: A health planning process should aim at continuous development and improvement and should incorporate health promotion and disease handling, based on a strategy including:

- current status + risks (animal based + resource based parameters);
- evaluation;
- action; and
- review.

Actual Knowledge About the Herd and Farm Situation as Basis for Planning

Making a plan implies that the farmer has a goal which he or she wishes to reach. When setting targets, a mean of measuring whether these targets are reached or not should also be identified. It is only possible to follow up on a given outcome when the situation is carefully monitored through an appropriate choice of records and assessments. Also in a questionnaire survey on farmers' perceptions of health plans, the use and review of actual farm data was a necessary part of making the plan useful [12]. In countries without a national disease and treatment database, the farmer must record all animal diseases and treatments to provide basic information for planning and evaluation. In some countries, such as those in Scandinavia, detailed records on disease treatments, reproduction, milk quality and production, etc. are maintained in a central data bases and can be used by the farmer and advisors [18, 19]. In Norway, since 1975, each cow has its own health card, and the recording is considered very reliable.

Cabaret [20] points to the fact that data is often only available for the most easily diagnosed diseases, and knowledge about challenges specific to organic livestock keeping is poor among many farmers and advisors. Record keeping, monitoring and surveillance are relevant and important elements of the plan, no matter whether they are kept on the farm or in central data bases. 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. Bell *et al*., [12] made a questionnaire survey about the farmers' perceptions of health plans and found that the use and review of actual farm data was a necessary part of making the plan useful.

Welfare assessment protocols have been used to evaluate animal health and welfare in organic dairy herds in the UK, Austria, Germany, Switzerland, Norway and Denmark in research projects as well as a part of national programs which may be linked to farm certification. The EU-funded project Welfare Quality® primarily has concluded that welfare assessment should be based on data describing the animals' actual status (animal based measures) which may be complemented with data describing their living conditions [21]. Main *et al*., [22] also conclude that '… *Providing assurance of the improvement in welfare outcomes is the desire of some UK certification schemes. However, this is only likely to be achieved if such schemes monitor welfare outcomes rather than rely on defining welfare resources that should be provided*'. Dairy cattle assessment protocols should also consider calves and young stock and be better integrated with the health planning process.

Communication in the Planning Process

Although the farmer has to be the driving force behind the planning process, external advice (e.g. veterinarian, fellow-farmers or advisors, such as agricultural scientists e.g. giving advice on feeding, or housing systems can be of great benefit. The interaction between the farmer and these so-called external persons is a crucial element of the continuous process of planning how animal health and welfare can be improved in a herd, both in terms of identifying goals and any relevant areas upon which to focus. People 'from outside' per se see things differently than a person who works in the same environment on everyday basis [8, 23-26].

Such communication may occur as part of formal health advisory systems or within different types of farmer groups or networks. Current research and development activities in Denmark [8], Germany [27, 28], Switzerland [10] and the Netherlands [9] show the benefits of a dialogue taking place as a continuous process, building on mutual trust and understanding, which develops over time. Research with farmers in groups as well as when engaging with advisors as individual farmers shows the importance of ownership of the health planning process and an openness with regard to receiving comments and positive, constructive criticism as well as suggestions for improvements given by other participants in a farmer group situation [8, 29].

Farmer Field Schools (FFS) is a concept for learning, knowledge exchange and empowerment that has been developed and used in some countries, particularly in the tropics over the last decades. In Denmark, the concept has been adapted to Danish conditions and named 'Stable Schools' [8]. The first four Stable Schools were established

in 2004 with the aim of phasing out the use of antibiotic-use in Danish organic dairy herds as their common goal which kept the groups together. Each Stable School went through a one-year cycle with two visits to each of the five or six farms participating in each group. All groups aimed at finding solutions to their very different complex farming situations. Problems were identified and solutions proposed based on each farmer's individual wishes and goals for the farm. The farmers' participation in Stable Schools was a complex, interactive learning process in many different ways on the personal as well as on the group level. Each farmer experienced being heard as an equal member of the group, as well as listening to colleagues who were also perceived as strong, self-confident individuals. At the same time, all farmers in a Stable School group opened up their own data and farm and also exposed its challenges and weaknesses to the whole group. Furthermore, they shared with each other the experience of obtaining better results on their farms and, at times, even the turning a critical farm situation into a positive development. The style of dialogue was based on an open-minded attitude to the exchange of participants' experience as guidance to letting the farmer in focus decide which changes could potentially be made. This resulted in a process free of conflict. Learning took place in farmer groups as a common social process, as described in the concept of 'situated learning' by Lave and Wenger [30] where learning is described as taking place in a social, physical, and personal context. Each person participating in a learning process is not learning as an individual but as a person in a socio-cultural and historical context.

Communication tools that stimulate reflection and dialogue include benchmarking [5, 12, 23], and the animal welfare assessment schemes as explained above.

Farm Specific Planning

Perhaps farm specific plans have a greater chance of being implemented as they are not based on general advice but on an analysis of the specific issues and circumstances on a particular farm. The application of general plans do not account for the diversity in farm practice, geography, aspirations, history, personalities and economic circumstances that exist between farms. In a process of animal health and welfare planning, the farm situation is described and challenges are identified. Potential solutions and practical actions are proposed thus assisting the farmer to manage any particular disease and welfare issue on the individual farm. The plan needs to be evidence based and derived from recent and appropriate data, both production, epidemiological and on animal behaviour, e.g. disease incidence and treatments, milk production and quality, locomotion scoring and body and general condition of the animals and their environment (e.g. hygiene), as well as how the animals behave in their environment and towards humans. This needs to be complemented by details regarding breed and breeding practice, housing, feeding, milking and other farm specific management practices as well as the farmer's own experiences, views and perceptions. The particular socio-economic conditions of the farm are also important e.g. are animals regularly purchased, or is there regular contact with neighbouring animals and farmers. All of these factors contribute to the all important risk assessment inherent to any successful health plan. This points to the importance of combining famers' own knowledge (defined as 'internal knowledge' in this context) with facts about actual events and conditions in the herd, collected in a systematic way and the views of external persons (defined as 'external knowledge' in this context). Based on a study of welfare assessments followed by expert evaluation on the farm situations, Whay *et al*., [31] concluded, based on a study of welfare assessments followed by expert evaluation of farm situations, that 75% of experts judged that action should be taken on over 80% of the participating farms, although no farm performed 'only well' or 'only bad' in the assessment. This study showed the complexity of each farm and underlines the necessity of assessing the farm before making a specific plan for that particular farm. Plans should always be based on this complex picture of actual knowledge from the farm [12].

Farmer Ownership

As stated above, the animal health and welfare planning process clearly has to be farm specific. Any advisors' role is to support the farmer in reaching the goals of the farm. It is crucial that farmers set the goals themselves and conclude what they actually will do to reach it. Farmer ownership over the planning needs to be ensured at various different levels.

- An animal health and welfare plan should always be based on the farmers own goals for his or her farm. The farmer should formulate the goals for the farm and be explicit about this to advisors, fellow farmers and whoever else is involved in giving advice.
- The data on which the animal health and welfare planning is based should not only be farm specific, but should also be accessible and understandable to the farmer.
- The farmer must decide and formulate the conclusions, or action points, of the plan. It is not enough that the farmer knows or agrees to a plan formulated by the advisor.
- The farmer's own perception of the current problems in the herd must guide the process, perhaps even when external advisors have different and conflicting views. If the farmer does not see a problem, then a lack of motivation may result in a failure to implement the plan effectively.

Ivemeyer *et al.,* [10] showed that medicine use reduced without a change in udder health in farms where all the farmers had volunteered to participate in the project. An improvement of udder health was achieved on those farms, where the farmers formulated udder health improvement as their own motivation in addition to the aim of reduction of antibiotics. Vaarst *et al*., [8] described how the farmer-driven Stable Schools became very effective in promoting radical improvements in the herds and explained this by the farmer ownership, among others because the farmers formulated their own conclusions as a response to group advice.

Acknowledgement of Good Aspects

In a process of continuous improvement, the focus may be firmly placed on the identified problems without any acknowledgement of the value of the learning experience gained through the successful implementation of any

improvements on the farm. During the ANIPLAN project workshop discussions, a consensus was reached that success stories and positive developments at herd or farm level should also be systematically evaluated. This acknowledges the learning aspect and provides appropriate 'closure of a case' which the farmer and perhaps others have been working on for a longer period. These success stories are believed to be motivating for all participants [8, 29] and are important elements when farmers are sharing experiences in group situations.

Animal Health and Welfare Planning in an Organic Context

Making a plan based on specific farm knowledge with 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 high standards of animal health and welfare, based on disease prevention and health promotion, there may be a need for a different emphasis in the planning processes of organic herds. Bennedsgaard *et al*., [32] showed a difference in the results regarding milk quality between 'old' and 'new' organic farms, strongly indicating that long established organic farmers had had time for a more profound and reflected approach, and consequently possibilities for improvements on a long-term basis based on the goals and values of a specific farm. 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 given the stated aspiration of farmers and consumer expectations. An organic health and welfare plan needs to have a very definite preventive and health-promoting focus, as well as a focus on naturalness in terms of allowing for natural behaviour patterns and species-specific conditions, including feeding and other management elements. Vaarst *et al*., [26] investigated a group of organic farmers claiming to have an explicit non-antibiotic treatment strategy and found that this strategy was based primarily on a long-term effort to improve herd health status and thereafter, on an effort to find alternative treatments for diseased animals. The farmers' perception of disease changed from 'being something that should be treated' to becoming a disturbing break in a daily rhythm. The change towards a non-antibiotic strategy was gradual and stepwise and could not be forced. There was generally a lack of veterinary support in terms of advice and discussion related to this process. Various reasons have been given for this, e.g. that veterinarians often did not perceive organic as something 'special', e.g. they often did not understand or acknowledge the explicit emphasis on naturalness animal welfare and therefore gave less useful advice.

A questionnaire survey among 180 Norwegian veterinarians revealed that most considered themselves to have limited knowledge on organic regulations. This can negatively influence their ability to give relevant advice regarding welfare and health actions [33]. Tavel and co-authors [34] drew a similar conclusion based on a Swiss survey of veterinarians. In 1998, Vaarst [35] made a qualitative interview study among 15 Danish veterinarians and advisors about their perceptions of working with organic farmers. The respondents did not generally perceive organic herds as something special, and they had little knowledge of organic standards, and in particular of the principles of organic farming. Many veterinarians (in Europe in general) tend to have few organic herds in their practice, and besides this, it may be the case that the majority of practitioners received their education at a time when the focus was more on disease treatment of single animals than the preventive measures characterising the organic approach. In the results of a questionnaire survey made as a joint effort by participants in the EU-funded concerted action network project SAFO, it was highlighted that the education of advisors – especially veterinarians – lacked both knowledge and insight into the special specific challenges of organic livestock farming and hence, organic livestock farmers severely lacked good advice [36, 37].

Despite the implementation of organic principles being no absolute guarantee for good welfare, existing literature indicates that organic standards form a good foundation for the provision of good health and welfare. Nevertheless, the standards cannot guarantee or cover all issues and conditions on a farm [38-40]. Active farmers and advisors, who are able to see things in a holistic context, are important actors in maintaining and developing the concept of organic farming. Economic pressures in agriculture generally may become a greater threat for organic dairy farms as they become increasingly 'conventionalised' [41]. Guptill [41] states that '*recent trends in organic dairy raise questions about whether organic dairy is conventionalizing, which is to say it is coming to resemble the conventional sector as shown in disparities of power in the value chain that pressure all participants to adopt more industrial practices'*. However, the same author points to a different strategy as a reaction to the increased pressure of conventionalisation where some farmers are forming more alternative solutions. In some countries, the geographical and climatic conditions by themselves place restrictions on industrialisation and Stöger demonstrates how small-holders survive through their networks and communication (unpublished data). 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.

CONCLUSIONS

Continuous development is needed within the farm to reach the goal of good animal health and welfare in organic livestock farming. The very different conditions between countries call for models are relevant for different farming types and can be integrated into local practice. The process of planning must include knowledge about the status within a given herd as background for taking decisions and planning future improvements as well as evaluating already implemented measures. Respectful communication between the owner of the herd and other farmers as well as animal health and welfare professionals (veterinarians and advisors) is paramount. Furthermore, specific attention has to be given to the fact that the farms are organic and have to live up to organic principles, and all actors play an important role in this and must therefore be able to co-develop organic livestock herds.

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