

Scientific Opinion on the overall effects of farming systems on dairy cow welfare and disease

Scientific opinion of the Panel on Animal Health and Animal Welfare

(Question No EFSA-Q-2006-113)

Adopted on 05 June 2009

SUMMARY

Following a request from the European Commission, the AHAW Panel was asked to deliver a Scientific Opinion on the welfare of dairy cows, considering whether current farming and husbandry systems comply with the requirements of and welfare of dairy cows from the pathological, zootechnical, physiological and behavioural points of view.

Due to the great diversity of topics and the huge amount of scientific data, it was proposed that separate scientific opinions on different welfare subjects would be more adequate and effective. Therefore, it was agreed that a scientific report, an overall scientific opinion and four risk assessments on: i) metabolic and reproductive disorders, ii) udder disorders, iii) leg and locomotion problems and iv) behavioural disorders, fear and pain would be produced. This overall scientific opinion integrates conclusions and recommendations from the scientific report with the outcomes from the four separate risk assessments. In the resulting list of outcomes, conclusions and recommendations considered to have a high priority are evidenced. This scientific opinion on the overall effects of farming systems on dairy cow welfare and disease was adopted by the AHAW Panel on 05 June 2009.

In considering the welfare of dairy cattle, some of the most important consequences of poor welfare are the occurrence of disease conditions, in particular foot and leg disorders and mastitis. Reproductive, metabolic and behavioural problems are also relevant indicators of poor welfare.

European dairy production is based mainly from specialized intensive farming but there is considerable diversity in how cows are housed and managed. Systems range from grazing all of the year to remaining in a building with zero-grazing. The farming system by itself is a major factor determining the health problems of dairy cattle and other aspects of their welfare, partly through housing and equipment and partly through management and handling practices.

Long term genetic selection for high milk yield is the major factor causing poor welfare, in particular health problems, in dairy cows. The milk yield of dairy cows has risen steadily over the last thirty years in Europe with approximately 50 % of this increase estimated to be attributable to genetic selection for milk production efficiency. This selection has also changed the form and size of dairy cows and hence demands on their behaviour and other adaptive mechanisms. The spatial requirements of the dairy cow have increased as well as its

vulnerability for mechanical impacts and wounds on the exterior parts of the body, the skin, limbs and claws. The genetic component underlying milk yield has also been found to be positively correlated with the incidence of lameness, mastitis, reproductive disorders and metabolic disorders. In order to improve dairy cow welfare there is an urgent need to promote changes in the criteria used for genetic selection in the dairy industry. Higher weight should be given to fitness and welfare traits when these may conflict with selection for milk yield. Genetic selection for improved fertility, health and longevity is likely to improve welfare and lead to greater profit for the farmer.

Whilst issues concerning genetic selection are common to different systems, when comparing different farming systems, hazards associated with housing and management variables have the greatest effects on dairy cattle welfare. The following are the major conclusions and recommendations when systems are compared.

Since the body size of cows has increased during the last 20 years, where cubicles are used, they should be wide enough to minimise any movement difficulties or teat trampling. Cubicles and tie-stalls should be designed in such a way that the forward movement of the body of the cow is not thwarted when changing position from lying to standing. The risk assessment exercise confirmed that poor cubicle design and lack of space are the highest ranked hazards, respectively in cubicle houses and tie stalls, in the development of the most common problems in dairy cows. A total space allowance of less than 8.6 m² in cubicle houses negatively affects welfare. Cubicle width should be at least 1.8 times cow hip width. In cubicle houses there should be at least as many cubicles as there are cows in the house. A lying area of at least 2.7 m² / heifer (up to 400 kg) is necessary to avoid negative impact on welfare and production. In loose-housed cows, the area around each feeding place is a location where much aggression can occur. Therefore, the feeding area should be designed in such a way and with sufficient space that all cows can feed with minimal aggression or other interference.

Since leg disorders are the major welfare problem for dairy cattle and leg disorders are a problem also in well managed cubicle houses, alternatives to cubicles e.g. straw yards and improvements to cubicle house design should be considered. When possible, dairy cows and heifers should be given access to well managed pasture or other suitable outdoor conditions, at least during summer time or dry weather. Tie-stalls restrict the voluntary movement and social behaviour of dairy cows. When periods of exercise are possible some of the adverse effects are reduced. Therefore, systems of husbandry and management should involve a minimum time of restricted movement in order that all dairy cows are able to meet their need to show certain behaviours such as grooming, social interaction and exercise. While tie-stall use continues, cows should have daily exercise that involves walking freely inside or outside (except where there are adverse climatic conditions) and also the freedom to carry out other behaviours. A minority opinion on the use of tie-stalls was expressed by some Panel members.

All dairy cattle should be fed a diet that provides sufficient energy, nutrients and dietary fibre to meet the metabolic requirements in a way that is consistent with digestion. When diet is changed there should be carefully controlled transition feeding in order to prevent poor welfare in the cattle. Feeding systems should allow every individual cow to meet her needs for quantity and quality of feed. Dairy cows should be provided with drinking water whatever their diet. This water should be in sufficient quantity to prevent any dehydration and should be: free from repellent odour and taste, harmful infectious agents, toxic substances and contaminants that can accumulate in body tissue or be excreted in milk. Both indoors as well as outdoors, continuous access to water should be provided. Automatically regulated troughs and drinker bowls should be installed in the animal houses and farmyards.

There should be systems for monitoring the prevalence of lameness by scoring locomotion and foot lesions every 3 to 6 months in all dairy herds. Because of the high risk of lameness in dairy cattle all dairy farmers should implement a lameness prevention programme. On farms with a high prevalence of recognisable locomotor difficulties, e.g. approaching 10%, there should be improvement of housing conditions, genetic strain and management practices.

In addition to improved methods for genetic selection, the prevalence of mastitis should be reduced also through: treatment of clinical and subclinical disease, dry cow therapy, identification and elimination of carrier cows, prevention of transmission of infection from cow to cow or through the environment, and improvement of the immune system by minimising stress factors and by a controlled and nutritionally-balanced feed intake.

Pain management should be part of the treatment of severe lameness and clinical mastitis.

Farmers should be well trained in recognizing signs of disease at early stages and veterinary advice should be sought at an early stage of disease in dairy cattle. Recommendations in this opinion for disease prevention and management should be followed.

The body of research on dairy cattle welfare should be incorporated into codes of practice and monitoring protocols that address potential hazards and incorporate animal-based measures of welfare outcomes.

Key words: Animal welfare, dairy cows, farming systems, lameness, mastitis, cow behaviour, metabolic disorders, housing, management, genetic selection.