

Guide to Good Animal Welfare in Dairy Production

2008



International Dairy Federation

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IDF Guide to Good Animal Welfare in Dairy Production

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Foreword

I welcome the decision of the IDF to publish this Guide to Good Animal Welfare in Dairy Production. This Guide sets out important information on welfare in dairy production, with a focus on science-based recommendations, in line with the OIE's global vision on animal welfare.

With the close linkages between animal health and animal welfare, the 172 Members of the OIE have been unanimous in supporting the democratic and transparent standard setting procedures of the OIE. At the international level, the OIE has established standards for the transport of animals by land, sea and air; the slaughter of livestock for human consumption and the killing of livestock for disease control, with the goal of improving animal welfare globally.

The involvement of international non-governmental organizations and industry associations, including the International Dairy Federation, in the development of international animal welfare standards has been crucial to success. The OIE continues to encourage Members to implement these standards through the establishment of appropriate national legislation and strengthening of Veterinary Services.

It is also important to raise awareness of the standards and to improve communication on animal welfare. The IDF Guide to Good Animal Welfare in Dairy Production represents an important step in raising producers' awareness of animal welfare and encouraging them to incorporate relevant requirements within their overall responsibility for the health of their dairy herds. The IDF Guide to Good Animal Welfare in Dairy Production is also an important companion reference document to supplement the IDF/FAO Guide to Good Dairy Farming Practice.

The OIE will continue to draw upon all available expertise and resources, working with experts from the research community, veterinary services, non-governmental organizations and international industry associations for the best outcomes. The OIE values this IDF initiative and looks forward to continuing fruitful OIE-IDF working relationships.

Bernard Vallat
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Acknowledgements

The Guide to Good Animal Welfare in Dairy Production was elaborated by a project group composed of experts, members of the IDF Standing Committees on Farm Management and Animal Health as well as representatives of the World Organisation for Animal Health (OIE) and the Food and Agriculture Organization of the United Nations (FAO). The objective of the guide is to promote good animal welfare practices in milk production at global scale. These practices must be based on science and take into account parameters which are relevant and essential to dairy farming. IDF National Committees gave unanimous approval for publication in July 2008.

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Introduction

Animal welfare is the application of sensible and sensitive animal husbandry practices to the livestock on the farm. It is strongly linked to animal health, which similarly depends on good animal husbandry. In dairy production systems this will include not only animals producing milk, but also the newborn, young female animals to be used as replacements and males in rearing units. Good animal welfare has a positive effect on production.

Good dairying practice of animal welfare is underpinned by the framework provided in The Five Freedoms that describe an animal's fundamental needs. Animal management practices should aim at keeping animals:

- Free from thirst, hunger and malnutrition
- Free from discomfort
- Free from pain, injury and disease
- Free from fear and distress, and also
- Able to engage in normal patterns of animal behaviour

An animal's welfare can be described by considering its state of well-being. Animals should live in reasonable harmony with their environment, have adequate fulfilment of their physical, health and behavioural needs, and not be subjected to unnecessary or unreasonable pain or distress.

1. The Benefits of Good Animal Welfare

For a dairy farmer to be successful at producing milk of good quality, the welfare needs of dairy animals must be met. Welfare needs can be considered from the perspective of the animal. An animal has needs at a basic level - those things that are essential for life; but to achieve good welfare it will also have needs, which, while not essential for survival, will improve living conditions and may also translate into improved productivity.

The British economist John McNerney (2004, Animal welfare, economics and policy, Discussion paper for the Department of the Environment and Rural Affairs, London, 68pp) proposed an economic framework for considering the state of animal welfare in relation to production (Figure 1). In its wild or natural state, an animal will express a “natural productivity” but its welfare is not maximised because of predation, disease, lack of food, and other adverse natural events (Point A). As animals have more of their needs filled when they are farmed, their production increases and their welfare improves at first when all their basic needs are met and then later as the secondary needs such as protection from diseases or shelter are met. Eventually the state of welfare will be maximised (Point B). Beyond this point, further efforts to increase production may start to impinge on the animal’s welfare (Point C). Ultimately, there arrives a point (Point D) at which the increased drive for production reaches (or exceeds) the animal’s biological limits, and welfare is poor (this equates to the point of W_{min} or “cruelty”). McNerney proposed that an excessive drive for very high production, without providing resources that meet the needs of individual animals appropriate to their capacity to produce, could result in a sharp decline in animal welfare to below that of its wild counterpart.

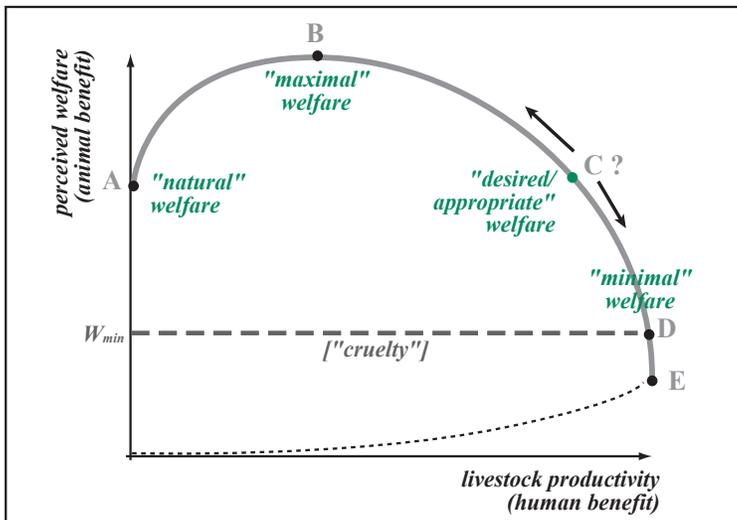


Figure 1. The Economic Framework (from McNerney 2004)

2. The Five Action Areas for Good Animal Welfare

Dairy production systems vary widely around the world: species are predominantly buffalo and cattle, but large number of goats and sheep are also farmed for milk production. Herd size varies from single female animals to many thousands. Feeding systems vary from extensive forage or grazing to full total mixed ration. Animals may be fully pastured or fully housed.

To ensure that this guide is totally applicable, the principles that define best management practices are generic. As a consequence their focus is necessarily the measure of success based on the outcomes for the animal rather than the provision of resources into the system.

This guide identifies five key Action Areas to be considered when developing and implementing quality management systems for dairy animal welfare:

- Stockmanship
- Feed and water
- Physical environment
- Husbandry practices
- Health management

Each Action Area has an associated set of principles that can be used to further define best management practices.

The welfare of animals in dairy production systems can be assessed and monitored using a combination of measures that indicate the level of delivery within the five action areas. These will be measures of the adequacy of the particular system in meeting the animals' needs. The selection of parameters to be used will therefore be specific to the dairying system under consideration. It may include elements of the following:

- Observation of animal behaviour that indicates stress or distress, e.g., incessant vocalisation because of hunger or water deprivation, fighting because of mixed social groupings, dunging in the milking parlour or while being milked, kicking at the bucket or milking machine because of painful milking procedures, increased respiratory rate because of heat stress, fearfulness of humans because of ill treatment
- Assessment of body condition score
- Assessment of locomotion score
- Assessment of relevant physiological indicators
- Assessment of environmental stressors such as excessive heat or cold, lack of shelter, faecal accumulation and housing density
- Presence of lesions such as hock rubs, open sores or injuries
- Assessment of the level of training and skill of stockpersons and availability of veterinary assistance

- Assessment of the adequacy of food and water resources to meet the needs of the animals.
- Assessment of health management plans and records of animal treatments

2.1. Stockmanship

Good stockmanship underlies the success of the dairying operation. A good stockperson will have empathy for the animals in their care and ability to identify their needs and will take action to provide their requirements.

- Those responsible for the care of animals should be competent and well-trained or experienced and have management skills appropriate to the scale and technical requirements of the production system, or have appropriate supervision.
- Knowledge of the normal appearance and behaviour of animals is essential for monitoring their health and welfare; a competent operator should be able to understand the significance of a change in behaviour of the animals.
- Those in charge of animals should be able to recognise early signs of distress or disease so that prompt veterinary advice or intervention can be sought.
- A competent operator should be able to handle animals compassionately and in an appropriate manner, anticipate potential problems and take the necessary preventative actions.
- People carrying out veterinary related tasks should be able to demonstrate competency especially for husbandry procedures that could cause suffering, e.g., disbudding/dehorning and for animal obstetrics.
- Educational programmes for farmers should include basic knowledge on animal behaviour and good practices leading to good animal welfare.
- In some countries and supply chains there may be farm quality assurance programmes relating to animal welfare. Where these exist, operators should:
 - Be familiar with and comply with all relevant national regulations and key industry standards/assurance schemes relating to product quality and safety;
 - Ensure records are maintained to demonstrate compliance with regulations and assurance schemes;
 - Keep themselves updated on technological developments that can prevent or correct welfare problems;
 - Emphasise the importance of training of personnel;
 - Include animal handling procedures as a component of farm quality assurance systems.

2.2. Feed and Water

The general principles for ensuring adequacy of food and water are that:

- The diet provided must take account of the animal's physiological state, i.e. lactation, pregnancy and growth, nutritional composition and quality of feed, and climatic factors.
Animals must have access to sufficient good quality food and drinking water to maintain good health, meet their physiological and production requirements and minimise metabolic and nutritional disorders. A balanced ration that supplies the energy and metabolic needs of the lactating dairy animal is essential.
- Water supplies should be of good quality, regularly checked and maintained.
- Growing animals should be fed well so as to achieve optimal growth to meet the requirements for replacement dairy animals.
- Ensure that the feed and water supplied do not contain levels of biological, chemical or physical substances, which are harmful to health. Animals must be protected from toxic plants and chemicals or any other harmful substances that they could ingest. Run-off from effluent and chemical treatments of pasture and forage crops should not enter stock water supplies.
- Changes of feed should be introduced into the diet gradually.
- Body condition scores should be monitored at regular intervals especially at calving, peak lactation and drying off. Appropriate minimum levels should be set beyond which urgent remedial action must be taken or veterinary advice sought.
- Where they exist, automatic feeding and watering systems must be monitored to ensure they are in working order and any problems promptly rectified.

Young Dairy Animals

- Newborn dairy animals must receive adequate colostrum or, if such is not available, appropriate commercial colostrum substitute. First colostrum feeding is preferably within six hours of birth.
- In situations when young dairy animals cannot be allowed to suckle, they should receive liquid feed in a way that fulfils their need to suckle.
- Young ruminants should not be weaned off liquid feeds until the rumen has developed sufficiently to allow it to utilise solids.
- Young animals should have access to balanced solid feeds of good quality from an early age to promote good rumen development. Cud feeding may be a good alternative for the development of rumen physiology in young animals.
- All feeding equipment used for young animals should be thoroughly cleaned after use.
- Feeds and grassland/pasture use should be monitored to deliver appropriate quality and amount of feed to growing dairy animals.

2.3. Physical Environment

Milking environment

- The ground should have a non-slip surface, be well drained and free of mud and manure.
- Dairy animals can be milked inside or outside of housing.

Where dairy facilities (milking parlours and handling yards) exist:

- Dairy facilities should be designed, constructed and maintained to minimize obstructions and hazards that have the potential to cause distress or injury.
- Floors should provide satisfactory footing and be easily cleaned.
- Fences, gates and loading ramps should be designed to allow good animal flow and prevent injury.
- Head bails and crushes should be designed to allow efficient handling of cattle, not endanger the animal or the operator, and allow easy release of the animal.

Feedlot areas and yards for holding animals

- The surface type and area should be appropriate for the nature and frequency of use to ensure that animals do not suffer discomfort.
- Holding areas should be designed to enable sufficient resting/recumbence time; as well as reduce underfeeding and the risk of mastitis and lameness associated with confinement.

Housing of dairy animals

- Housing systems should be designed and constructed to meet the needs of the animals.
- Bedding areas should be cleaned regularly and/or bedding renewed as it becomes soiled.
- Sufficient space should be allowed to prevent discomfort and ensure that the animals are able to meet their normal behavioural requirements such as for lying down/resting, moving about, eating, drinking and the elimination of faeces and urine, and without coming under excessive social pressure. Overcrowding increases social and microbiological stress in all age groups, and therefore it increases risk of disease. As a general guideline, the minimum space provided should be 1 m² per 100kg liveweight, but the actual space allowance that is provided should ensure that the animals achieve adequate lying/resting times.
- The accommodation and management practices followed should ensure that air circulation, temperature and concentrations of ammonia, carbon dioxide and slurry gases, are kept within limits which are not harmful.
- Lighting should be sufficient to enable inspection of animals, but not so intense as to cause discomfort and ensure that animals can maintain a reasonable circadian pattern of light and dark periods.

- Groups of young animals should be kept to a reasonable size to minimise social and microbiological stress and sort by size/age to prevent bullying.
- Regular manure evacuation should be provided and there should be sufficient drainage in housing and walkways.

Provision of shade and shelter in outside situations

- Protect animals from adverse weather conditions and the consequences thereof which includes stress factors such as weather extremes, forage shortages, unseasonable change and other conditions causing cold or heat stress.
- In hot conditions shade or an alternative means of cooling should be provided.
- In cold conditions shelter and additional feed inputs should be provided.
- Where exposure to weather conditions results in development of health problems remedial action should be taken to minimise the consequences of such exposure.
- Young animals that have been removed from their mothers should be provided with shelter from conditions that are likely to affect their welfare adversely.

2.4. Husbandry Practices

Handling animals

- Handle animals at all times in a way as to minimize risk of injury and distress.
- Find time to observe animal behaviour and examine all animals at least once daily when they are milked, or in the paddocks or barns.
- All animals, in particular young animals and stock bulls, should be managed and handled in a manner that promotes good temperament and docility.
- Take account when handling animals that they have different vision for distance and detail. They also should not be subjected unnecessary loud noises.
- Use handling aids e.g., goads and dogs, carefully so as not to cause pain or distress. Dogs used for handling animals must appropriately trained and under full control at all times.
- Ensure that animals are moved at such a pace that they can see where they are going and where they are placing their feet.
- When droving animals for longer than normal distances ensure that droving speed and distance takes account of the conditions and the fitness of the animals, and understand the signs of distress which indicate that animals may need rest, water and feed.
- When mixing animals provide sufficient area that newcomers can move into free space if pushed, and observe their behaviour carefully.

- Take a quiet approach at all times with animal restraint, and apply restraint in such a way as to minimize the risk of injury to the animals and the handler.
- Nose rings and equipment used for animal restraint must be fit for purpose and used in a manner that does not inflict unnecessary or ongoing pain and discomfort. Animals restrained for husbandry procedures must be kept under close supervision. Operators should be conversant with safe operation of all restraint equipment and such equipment should be kept in good working order.
- Most dairy animals are gregarious. Use herd management and husbandry procedures that do not unnecessarily compromise social activity, and do not isolate them unnecessarily as their instinct to herd is strong.

Milking

- Milking should be comfortable for the animal. In particular animals should not be over-milked or under-milked to prevent pain and damage to the udder and teats.
- Establish a regular milking routine that recognises the stage of lactation. For example, females in full lactation may need more frequent milking to relieve udder pressure.
- All animals must be milked or suckled by young frequently enough during lactation to minimize discomfort and maintain udder health.
- Where animals are milked with equipment, this must be maintained to a level that minimises risk of damage to teats and udder. Where there is a risk of an extended failure of the electricity supply, provision should be made for an independent generator of sufficient power to start and operate the milking machine and ancillary equipment.
- Where animals are milked by hand, correct techniques must be applied in order to not harm the udder or teats.
- Take special care of animals being milked for the first time, and if possible familiarise them with the milking facility prior to giving birth.

Painful Husbandry Procedures

- Do not use procedures that cause unnecessary pain or discomfort. The welfare benefit to the animal of carrying out the procedure should be justifiable in terms of benefit to the animal. Consideration of alternative husbandry procedures to avoid the need for pain should be considered e.g. trimming of tail hair rather than tail docking to maintain udder cleanliness.
- Hoof trimming should be done by a competent trained operator or farrier if the hoof length or shape is abnormal and resulting in lameness.
- Dehorning and disbudding should be done with consideration of the animal's welfare.
- Adhere to national regulations with respect to carrying out painful husbandry procedures, e.g., whether the procedure is permitted, age regulations or the need for provision of pain relief.

- Veterinary procedures should be carried out using techniques that minimise potential pain e.g. the use of local anaesthetics, sedatives and pain relieving medication.
- Animals should be clearly identified to facilitate post-operative inspections.

Reproduction, birthing and weaning practices

- Males that have a greater likelihood of siring low birth-weight offspring should be selected for mating with young or smaller framed females as large young can cause significant damage to small dams particularly during their first parturition.
- Animals close to giving birth should be provided with a quiet and hygienic place where they can give birth undisturbed and be observed carefully.
- Where animals give birth in outdoor areas, the pens or paddocks should provide shelter and protection from adverse weather conditions, and be well drained.
- Where an animal is having difficulty giving birth, appropriate assistance should be given immediately.
- Animals that are unable to stand as a consequence of birthing difficulties or metabolic disease must be provided with food and water and shelter from adverse weather, and be placed on bedding or on soft ground.
- Apparatus to lift and support recumbent animals should be used with care and according to manufacturers specifications; in particular animals must be able to breathe freely and not suffer unnecessary discomfort.
- Newborn animals should not be transported to sale yards until sufficiently hardy e.g. adequate body weight and a dry navel.
- Newborn and young animals must be handled and moved in a manner that minimizes distress and avoids injury, bruising and suffering.
- Techniques to foster young onto nurse animals should not compromise the welfare of either and should be done with minimum stress to both parties.
- Procedures for pregnancy diagnosis, artificial insemination and embryo transfer should only be undertaken by trained and competent operators.

Transport of animals on and off the farm

- All domestic transport should be in accordance with national regulations wherever these exist. However, in absence of national regulations, international (OIE) standards should be used as guidelines for domestic as well as international animal transport.
- During transport ensure that the vehicles are appropriate and that animals are not over-crowded.
- All animals selected for transport off the farm must be fit enough to withstand the planned journey without suffering unreasonable or unnecessary pain or distress – when in doubt consult a veterinarian. Animals unable to stand should not be transported and emergency humane slaughter should be carried out on-farm.

- Pregnant animals close to calving must be transported with particular care and consideration for their condition. They should not be transported except in an emergency or to improve their welfare, e.g., moved to a location to improve transitional nutrition, so that they can be more closely monitored during calving, or for veterinary care.
- Every unweaned animal to be transported off the farm should be fed as least half of that day's ration of colostrum or milk prior to transportation.
- Transport collection areas for young animals should provide adequate shelter and comfort for all and facilitate their handling.
- Preparation and planning for transport should include consideration of the animal's physiological state e.g. whether it is a female in peak lactation, as well as the method, distance and duration of the trip.
- Where animals are transported for longer periods of time, provide for feeding, watering and resting times.
- Loading and unloading should be done using appropriate ramps, or approved slings in the case of sea transport.
- When taking delivery of new animals be sure to:
 - Keep them in a quiet environment with feed and water for an appropriate adaptation time;
 - Pay careful attention to their behaviour;
 - Introduce them in an appropriate group at the appropriate time.

2.5. Health Management

This section relates to health management in relation to animal welfare, and not to management of risk associated with causative agents of ill health. In this respect the main concerns for health management in relation to animal welfare are:

- lameness, mammitis/mastitis, injuries, acidosis for dairy cows
- diarrhoea and anaemia for calves
- respiratory disease
- tropical and contagious diseases for all ages and species of dairy animal.

Veterinarians are trained animal health professionals and their advice should be sought in all matters of animal health management. Allowing unqualified personnel to treat animals can result in severe animal welfare problems due to incorrect diagnoses and treatments or poor surgical techniques with incorrect or inadequate anaesthesia and pain relief. Health management plans should meet relevant national and international veterinary requirements.

Stockmanship skills relating to animal health

- Those responsible for the welfare of the animals must be competent at recognizing ill health or injury and take professional advice as appropriate.
- Stock handlers should be familiar with the more common health problems of their stock and organise prompt and expert attention.

- The frequency of inspection of stock will depend on the circumstances and management systems. Situations where careful inspection is particularly important are when:
 - animals are close to giving birth;
 - animals are being held in restricted areas controlled by electric fences;
 - conditions likely to promote diseases such as bloat, nitrate or other poisoning, or mastitis are likely to occur;
 - there is a situation of disaster (either man-made or natural) or emergency such as outbreaks of contagious disease (e.g., foot and mouth disease) or bankruptcy.

Managing lameness

- Animals should be managed so as to minimise the incidence of lameness. This will require that procedures for moving animals do not place unnecessary pressure on feet and legs, and that lane ways, yards and facilities are designed and constructed with good cow flow and appropriate surfaces in mind.
- Cow locomotion should be assessed using a standardised scoring system that allows the early detection of lameness, and levels of lameness should be monitored and investigated where necessary to determine underlying causes and appropriate treatment.
- Hooves should be inspected frequently and hoof-care carried out in a timely manner using professional assistance as appropriate.

Seeking veterinary advice

- Veterinary advice should be sought when:
 - a high proportion of animals in a herd are affected by a disease;
 - where there is persistent ill-thrift and poor performance;
 - when first aid or other initial farm treatment does not result in satisfactory resolution of the problem;
 - an animal is recumbent and unable to stand and does not respond to treatment after 12 hours, and where emergency slaughter or euthanasia is not performed;
 - where there is suspicion that an OIE-listed infectious disease is present;
 - in the case of a fracture or severe injury where emergency slaughter or euthanasia is not performed.
- Only use registered stock remedies or veterinary medicines as prescribed by a veterinarian and administer these in the correct manner so as to avoid unwanted side effects such as painful swellings.

Herd health management programmes

- A planned herd health management programme should include:
 - Preventative treatments for conditions of concern and vaccination programmes as necessary, and for management of diseased or injured animals;

- Mineral and vitamin supplementation to correct deficiencies if they occur;
- Provision of magnesium and calcium supplements around calving time to manage downer cow syndrome and other metabolic disease;
- Consideration of the need to maintain an ongoing satisfactory level of cleanliness and hygiene of animal housing, pastures and milking facilities.
- A biosecurity plan should be implemented when introducing new stock of unknown disease status to the farm. This plan may include feasible preventative measures like vaccinations and treatment for parasites and should also consider whether there is need for a quarantine/isolation period.
- A recording system relevant to the animal health plan and to the country's national and international requirements should be kept up-to-date by the herd operator because regular monitoring of the records aids management and quickly reveals problem areas. Minimum recommended record requirements include:
 - Mortalities and their causes per age-group;
 - Reproductive disorders and abortions, neonatal deaths;
 - Levels of lameness within a herd should be scored regularly and where necessary investigated to determine underlying causes and appropriate prevention;
 - Incidence and details of preventable diseases and injuries;
 - Incidence of mastitis;
 - Vaccinations, tests;
 - All treatments and withdrawal times for medicines whether controlled by veterinary regulations or not.

Emergency slaughter

Where it is necessary to kill sick or diseased animals, or those in pain:

- Do this in such a manner as to avoid unnecessary pain.
- In the absence of national regulations, international (OIE) standards should be used as guidelines.
- Where a captive bolt device is used, the selection of the cartridge strength must be appropriate for the particular class of animal.
- Immediately following stunning, the animal should be bled out to ensure death.

The Guide to Good Animal Welfare in Dairy Production was elaborated by a project group composed of experts, members of the IDF Standing Committees on Farm Management and Animal Health as well as representatives of the World Organisation for Animal Health (OIE) and the Food and Agriculture Organization of the United Nations (FAO). The objective of the guide is to promote good animal welfare practices in milk production at global scale. These practices must be based on science and take into account parameters which are relevant and essential to dairy farming.

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