



End of Project Report

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**ANIMAL WELFARE GUIDELINES FOR BEEF
PRODUCING FARMS**

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INTRODUCTION

"Over the last two decades the welfare of farm animals has been increasing in importance as an issue, both for the general public and for the scientific community. This is partly due to changing attitudes towards animals and also to the increased intensification of animal production in western countries over the latter half of this century. Although this intensification has greatly increased efficiency and levels of output from animal production, it has also brought new problems to be addressed by animal and veterinary scientists, as well as a questioning of many farming practices by the consuming public.

The scientific consideration of farm animal welfare is important, due to ethical obligation to maximise health and well-being and eliminate suffering in animals that are under human stewardship, fulfil the requirements and demands of the general community and improve the efficiency of animal agriculture by optimising animal health and productivity.

In addition, within the European Union, community-wide legislation is continually being drafted and implemented with a view to safeguarding farm animal welfare, and it is important that such laws be based on objective, scientifically-derived information.

Beef cattle production within the European Union, and in Ireland in particular, is less intensive than other areas of animal agriculture which induce the most welfare concerns such as pig and poultry production. Nonetheless, there are aspects of beef cattle production such as the housing of animals during winter, castration, dehorning, transport, handling and slaughter which have the potential to cause stress, pain and injury if not managed correctly. Increased stress levels in cattle also have the potential to lower immunity to disease-causing factors. All of these potential responses contribute to, and result in, reduced animal welfare" (Fisher, 1996).

BACKGROUND

The UK Ministry for Agriculture, Fisheries and Food Welfare Codes list five basic freedoms which should be given to animals. The version of these by the Farm Animal Welfare Council (1993) (UK) is listed below and provides a more comprehensive concept of animal welfare.

1. Freedom from thirst, hunger and malnutrition
2. Freedom from discomfort
3. Freedom from pain, injury and disease
4. Freedom to express normal behaviour
5. Freedom from fear and distress

In essence, animal welfare guidelines are the application of sensible animal husbandry practices to the livestock present on the farm. Animal welfare is concerned with the well-being of the animal, and will thus complement the objectives of a beef assurance scheme and which ensures that beef produced on farm is safe for human consumption.

A recent meeting in Edinburgh (September, 1998) organised jointly by the British Society of Animal Science and the Scottish Centre for Animal Welfare Sciences discussed "Farm Animal Welfare - Who Writes the Rules", highlighted the importance of Farm Animal Welfare.

- The retailer is currently the most important rule setter and can ignore international trade agreements in applying the rules.
- Many consumers are concerned about the whole food chain primary production to retail. They require assurances that all processes are acceptable and safe. These concerns are mainly voiced by the large retailers on behalf of their customers.
- A significant factor influencing a person's view of animal welfare is their upbringing, associating "nice animals" with similar feelings to ourselves.
- If good welfare systems could be shown to improve product eating quality for which consumers will pay a premium, developments in animal welfare will be rapidly and willingly accepted by producers.
- The Scottish Quality Beef and Lamb Association have developed quality assurance at all levels of the supply chain from farmer to retailer. Three key features need to be addressed in a successful scheme.

- setting standards which are meaningful and achievable
- gaining widespread acceptance and commitment by the industry
- independent audits and recognition by official government and trade bodies
- Scottish beef farmers must compete on quality as they cannot compete on price
- Rules are not the same as standards, i.e. set standards for animal welfare, operate production to the standards, with rule-based on standards.

WELFARE GUIDELINES

The welfare guidelines are intended to enable farmers to adopt the highest standards of animal health and welfare. The basic guidelines for the welfare of animals are:

Stockpersonship

Skilled, knowledgeable and sensitive stockpersonship should always prevail. The animal's health and welfare must be safeguarded by the use of an appropriate feeding strategy, vaccination policy, preventative medicine, veterinary advice and treatment, stocking rate and stocking density. Detailed records should be kept of the occurrence of disease or other disorders, culling and deaths in order to provide an information base to herd health management. A competent stockperson will have adequate practical knowledge of herd management and the husbandry system used. The development of such skills can be achieved through formal training and/or working under the supervision of a competent professional. People involved with animal management should keep themselves updated in technological developments which can prevent or correct welfare problems.

A competent stockperson should be able to:

- recognise whether or not animals are in good health
- recognise that the general environment (indoors or outdoors) is adequate for the promotion of good health and welfare
- understand the significance of a change in the behaviour of the animals

- understand the husbandry system used
- know when veterinary intervention is necessary
- handle animals with care

A good stockperson will inspect all animals as often as necessary. Particular categories of animals will require more frequent inspection i.e. young calves, cows in late pregnancy etc.

HUSBANDRY PRACTICES

Good animal welfare in respect of husbandry practices can be achieved by following best practice options which minimise stress to the animal. The best practice options are detailed in various Teagasc publications (see Appendix 1). All farms must have proper animal handling facilities including pens and a crush where an animal can be restrained with minimum risk of injury or stress. Good handling facilities also benefit the safety of the personnel involved in handling the animals. Early and frequent contact with competent persons particularly at an early age greatly reduces the stress to animals subsequently.



Good husbandry practises which provide for both cow and calf

A summary of the "Welfare of the Artificially Reared Calf" is presented in Appendix 2 and the "Protection of Animals During Transport" is presented in Appendix 3.

A bovine register must be kept by all herd owners under the National Beef Assurance Scheme. This also includes the humane destruction of sick or injured animals and notification of the deaths.

VETERINARY TYPE ACTIVITIES

Disbudding

Disbudding of calves is carried out to reduce injuries and to comply with the Regulations (Diseases of Animals Act, 1966).

- A cauterisation method (i.e. using a heated disbudding iron at 1-2 weeks of age to remove the horn buds is preferred to the use of caustic potash which can continue to produce pain after the operation is complete. It is illegal to disbud calves after 14 days of age without using an anaesthetic [Veterinary Surgeon Only (VSO)].
- Use a custom-built calf dehorning crate to minimise stress to the calf and for optimum safety to the operator.

Castration

- Male calves intended for castration should be castrated between 2 and 6 months of age. The operator should be trained in the burdizzo procedure.
- Calves over six months of age should be castrated by a vet with the use of an anaesthetic (VSO).
This is a legal requirement.

Dosing

Dosing of an animal with medicine may be by the oral route of administration for the treatment or prevention of disease. The operator should have handling facilities which restrain the animal so that the medicine can be administered with minimum stress or risk of injury to the animal. The dosing equipment used should be appropriate for the size of animal and care should be taken to avoid injuring the animal's throat.

Hoof Treatment

- Correct hoof-trimming is of primary importance in the treatment of claw lesions, occasionally supplemented with antibiotic therapy. Footbathing is used in the control of the interdigital conditions and heel horn erosion.

Parasite Control

Parasite control is an important consideration in the welfare of cattle and appropriate action should be undertaken to control and/or prevent parasitic infection.

- External parasites or ringworm resulting in skin irritation cause the animal to scratch and be uncomfortable. Medical treatment for these are detailed in the Teagasc Teaching Manual.
- Internal parasites including stomach worm, hoose, liver fluke and coccidia all produce undue stress on the animal and unless appropriately treated will result in morbidity and mortality. Details of veterinary treatment and prevention is again available in the Teagasc Teaching Manual.

FACILITY TYPE ACTIVITY

Water

- Unrestricted access to a clean fresh water supply is desirable for all cattle.
- Water troughs or drinkers should be regularly cleaned and inspected daily to ensure that they are fully functional. Contaminated dirty water may restrict the animal's requirement for water and thereby create stressful conditions.

Fencing

- Pastures should be properly fenced. Proper boundary fencing prevents contact with other groups of animals from neighbouring herds and reduces the risk of the transfer of infectious disease to the herd, prevents intrusions of neighbouring cattle into the herd which can cause distress and unease, the consequence of which could be aggressive behaviour and/or injury.
- Fences should not contain any hazards which could cause injury to the cattle.
- Electric fencing should always be operated as per manufacturer instructions.

Shelter

- The provision of shelter for older animals from a production perspective is not critical in our temperate climate, as the adult ruminant produces excess body heat which must be dissipated.
- Protection from wind and rain should be provided where possible particularly for young stock outdoors for the first time.
- Outwintered cattle should have access to a well drained lying area and natural shelter.

Housing

Cattle are normally outdoor at pasture for a 7 to 8 month period each year.

- Housing of cattle in Ireland was designed to provide shelter from winter climatic conditions, particularly in the months of December or January when grass is in short supply.
- All houses should be adequately ventilated allowing for an adequate supply of fresh air thus, allowing heat dissipation and preventing the build-up of carbon dioxide, ammonia or slurry gases.
- Surfaces should be even and non-slip to avoid unnecessary underfoot conditions.
- All buildings should be adequately ventilated with sufficient air exchange to meet the animals requirements.
- The accommodation should contain sufficient source of natural or artificial light so as not to cause discomfort to the animals. Artificial light should also be provided to enable adequate inspection of the animals in particular for cows in late pregnancy and young calves.
- Each building accommodation should have a suitable smoke or fire alarm system installed in order to detect fire or smoke at an early stage.
- Uneaten or spoiled food should be removed to avoid attracting rodents or other undesirable wildlife.



Provide an adequate supply of good quality pasture

Spatial Allowance

Slatted floor housing is the appropriate housing system for the Irish cattle population. Currently, there are more than 60,000 slatted floor units in operation in Ireland.

- Housed stock should have freedom of movement and ample floor space for lying, grooming and normal animal to animal interactions. Animals should not be tied or kept in isolated pens unless this is necessary for treatment and care during illness.
- Over a 4 to 5 month winter period a well designed, properly constructed and fully maintained slatted floor unit for cattle provides the necessary comfort with minimum distress or injury to the cattle.
- Escapes/creeps should be provided, if young calves are housed adults, i.e. sucklers.

Feed Barrier

- There should be sufficient space for all animals to feed comfortably at the same time.
- The feed trough should be sufficiently large such that animals have adequate access to food at all times.
- Avoid any sharp edges or projections on the feed barrier or on the pen divisions which could cause injury to cattle.
- The feed should be kept within reach of the animal and any contaminated or solid feed removed.

Calving

- Body condition score within the range 2.5 to 3.0 for the cow at calving is desirable.
- Consider choice of bull for ease of calving which is especially important for heifers.
- Provide safe calving facilities so as to have minimum stress and risk of injury.
- In the case of abnormal or difficult calvings prompt intervention should take place to avoid unnecessary distress or even death to the cow and/or the calf.
- Assist the calf in obtaining adequate amounts of colostrum within 2 to 4 hours of birth. For calves which will remain with the dam, provide conditions which will promote bonding between cow and calf.

FEEDING AND MANAGEMENT TYPE ACTIVITIES

Weaning of Suckled Calves

Weaning of the suckled calf from its dam can be particularly stressful for the calf, which in addition to removal from the dam may be compounded by several other stressors, e.g. change of diet (grass and milk to conserved feed with or without concentrates), change of environment (outdoors to indoors), transport/marketing, de-horning and castration.

- Calves that are weaned abruptly in the autumn, housed and introduced to silage and concentrates, have a low feed intake initially. All calves should be provided with a concentrate creep feed prior to weaning. While suckled calves may be slow to adapt to creep feeding the stress that normally occurs following weaning will be reduced considerably if calves are consuming 1 kg of creep feed daily prior to weaning.
- The preferred option is to keep the herd in a properly fenced field with a good grass supply or with silage (or hay) fed and the cows removed gradually (up to one-quarter on

any one occasion) to a location away from the calves. As the calves remain in the same herd, with adequate feedsupplies, the upset caused is reduced considerably. During this period the concentrate creep can be increased gradually to about one kg per calf daily.

- If however, immediately after weaning, cows and calves are housed then they should be housed in adjoining pens with calves having access to the cows for up to two weeks while getting accustomed to their new diets. Concentrates should be introduced gradually to the calves at this time if they have not been previously creep fed.
- Following weaning it is essential that factors resulting in stress are kept to a minimum. Practices such as dehorning or castration should not be carried out in the four week period before or after weaning. Similarly, abrupt weaning, immediate sale and transport will lead to undue stress which could predispose to respiratory problems.

Movement of Animals

- At all times animals should be treated and handled in such a manner as to avoid injury and stress. The use of goads or electrical prodders are undesirable.
- Animals should be allowed to move at their own pace. The movement of animals from one paddock to another or to penning facilities should be done without recourse to excessive force, i.e. beating the animals or having an untrained aggressive dog which causes the animals to panic.
- At the time of movement, check for any abnormal behaviour, lameness, tardiness to move or isolation from the remainder of herd.
- Have adequate help available to move the animals.
- Cattle need to see where they are expected to move to, i.e. if going indoors or into a truck make sure that lights are on and corridors are clear.
- Cattle are fretful of new events and need to be gently handled so that they adjust to a new situation.

Pasture Management

The pasture allocation for the animal should be sufficient to

meet the animal's feed requirements.

- A supply of clean fresh water should be available at all times.
- The pasture area should be free of hazards which may cause injury to the animal.

Feed Supply at Pasture

- An adequate supply of good quality pasture for suckler cows in spring and early summer ensures rapid weight recovery, good milk production and good reproductive activity in the cows. Paddock grazing or the use of a buffer area allows better budgeting of the grass available, thereby matching the demand of the animals with grass supply. A flexible approach to grassland management is essential to control within and between year variation in grass growth.
- Overstocking resulting in cows losing liveweight is not acceptable. Work at Grange has shown the necessity of substantially reducing the stocking rate in autumn in order to provide



Provide an adequate supply of good quality pasture

- adequate feed supply.
- Overstocking in the autumn has an undesirable effect on calf and cow performance. The calf will be unable to meet its requirements for good growth and the cow will not have gained adequate body reserves at pasture. These body reserves can be utilised effectively in the winter period.
 - Undue delays in weaning on scarce autumn pasture can result in rapid loss of body condition in suckler cows.

Indoor Feed and Water Supply

The indoor feed supply should be such that the animal can readily satisfy its daily appetite.

- Concentrates should be introduced gradually and sufficient roughage should also be available.
- The feeds offered indoors should form a balanced diet with respect to protein, energy, vitamins and minerals. Deficiencies of any of the above may result in impaired performance and an increase in susceptibility to disease.
- Clean fresh water should be freely available at all times. Drinkers should be checked daily and cleaned if dirty. Prevent faecal contamination of water sources.
- The water supply should be designed so as to minimise the risk of the water freezing in the supply line and thereby cutting off the supply to the cattle.

Mineral Supplementation

- It is good policy to provide balanced mineral-vitamin mixtures to cows pre- and post-calving during the winter months. Magnesium supplements are needed during the spring and autumn in recently-calved cows, and at weaning time.
- On many farms where there is a history of mineral deficiency calves and yearlings may need supplementary vitamins

Behaviour Problems

- At housing, cattle of broadly similar age and size should be penned together where possible. This social group should be allowed to develop and reallocation of animals to other pens should be minimised. Sick animals should always be segregated

- from other animals.
- During the daily inspection(s) of animals, check for any abnormal behaviour. At meal feeding check that all animals have equal desire to feed. Failure by an animal to go to the feed trough may be an early indication of illness or timidity. Ideally, do not mix heifers and steers in the same pen or adjoining pens if possible.
 - A heifer on heat attracts the attention of the steers and the mounting behaviour can result in undue stress to the female and the risk of injury to the animals

REFERENCES

Fisher, A.D. (1996). Welfare assessment of beef cattle under intensive management conditions. Ph.D thesis, National University of Ireland

Farm Animal Welfare Council (1993). Second report on 10 priorities for research and development in Farm Animal Welfare, MAFF, Tolsworth, UK.

**APPENDIX I. BEST HUSBANDRY PRACTICES -
PUBLICATION LIST**

Teagasc Workbooks

Calf Rearing

Breeding and Calving Cows

Introduction to Farm Animals

Suckler Calf Production

Animal Health and Welfare

Building Construction

Maintenance Around the Farm

Production and Marketing of Beef Cattle

Grass Production

Grass Conservation

APPENDIX 2. WELFARE OF THE ARTIFICIALLY REARED CALF

The following summarises the main aspects of the European Communities (Welfare of Calves) Regulation 1995 and 1998 amendments.

1. Materials used for the construction of calf accommodation and equipment with which calves may come into contact shall not be harmful to the calves. Those parts of the accommodation with which the animals come into contact shall be thoroughly cleansed and disinfected, using an approved disinfectant to prevent cross-infection and the build-up of disease-carrying organisms.
2. Electrical circuits and equipment shall be installed in accordance with the terms of the National Rules for Electrical Installation ET 101/1991 (2nd Edition) so as to avoid electrical shocks.
3. Insulation, heating and ventilation of the building shall ensure that the air circulation, dust level, temperature, relative air humidity and gas concentrations are kept within limits which are not harmful to the calves.
4. All automated or mechanical equipment essential for the calves health and well-being shall be inspected at least once daily. Where defects are discovered, these shall be rectified immediately or, if this is impossible, appropriate steps shall be taken to safeguard the health and well-being of the calves until the defect has been rectified, notably by using alternative methods of feeding and maintaining a satisfactory environment.
Where an artificial ventilation system is used, provision shall be made for an appropriate back-up system to guarantee sufficient air renewal to preserve the health and well-being of the calves in the event of the failure of the system, and an alarm system, independent of the mains electricity supply, shall be provided to warn the owner or person in charge of the breakdown or in the event of

fire. The alarm system shall be tested at a minimum once a month and maintained in proper working order.

5. Calves shall not be kept permanently in darkness. To meet their behavioural and physiological needs, the accommodation shall be well lit, by natural or artificial light, for at least 8 hours a day. Every source of artificial light shall be mounted so as not to cause discomfort to the calves. An adequate source of light shall be available to enable the calves to be properly inspected at any time.
6. All housed calves shall be inspected by the owner or the person responsible for the animals at least twice daily and calves kept outside shall be inspected at least once daily. Any calf which appears to be ill or injured shall be treated appropriately without delay and veterinary advice shall be obtained as soon as possible for any calf which is not responding to the stock-keepers care. Where necessary, sick or injured calves shall be isolated in adequate accommodation with dry, comfortable bedding.
7. The accommodation for calves must be constructed in such a way as to allow each calf to lie down, rest, stand up and groom itself without difficulty. No calf shall be confined in an individual pen after the age of eight weeks, unless a veterinarian certifies that its health or behaviour requires it to be isolated in order to receive treatment. The width of any individual pen for a calf shall be at least equal to the height of the calf at the withers, measured in the standing position, and the length shall be at least equal to the body length of the calf, measured from the tip of the nose to the caudal edge of the pin bone, multiplied by 1,1. For calves kept in groups, the unrestricted space allowance available to each calf shall be at least equal to 1.5 m² for each calf with a liveweight of less than 150 kg, at least equal to 1.7 m² for each calf with a liveweight of 150 kg or more but less than 220 kg and at least equal to 1.8 m² for each calf with a liveweight of 220 kg or more.

APPENDIX 3. TRANSPORT OF CATTLE

The following summarises the main welfare aspect of the disease of animals (Protection of Animals during Transport) Order 1995 as it relates to cattle.

1. Pregnant animals likely to give birth during carriage, or animals having given birth during the preceding 48 hours, and new born animals in which the navel has not completely healed, shall not be considered fit for transportation.
2. Animals shall be provided with adequate space to stand in their natural position and, when necessary, with partitions to protect the animals during transport. On long journeys, unless special conditions for the protection of animals require otherwise, animals need room to lie down.
3. The means of transport shall be constructed and operated so as to protect animals against inclement weather and marked differences in climatic conditions. Ventilation and air space shall be in keeping with the conditions of transport.
4. Suitable ramps, bridges, ramps or gangways shall be used for loading and unloading cattle. The flooring of this equipment shall be constructed so as to prevent slipping, and the equipment shall be provided with lateral protection if necessary. During transport, animals shall not be suspended by mechanical means, nor lifted or dragged by the head, horns, ears, legs, tail or hair. In addition, the use of electric prods should be avoided as far as possible.
5. The floor of the means of transport or container shall be sufficiently strong to bear the weight of the animals being transported: it shall be of non-slip design; if it has any spaces or perforations these shall be completely smooth to prevent injury to the animals. The floor shall be covered with sufficient litter to absorb droppings unless this can be dealt with in a different way presenting at least the same advantages or unless droppings are regularly removed.

6. In order to ensure the necessary care of the animals during transport, consignments of livestock shall be accompanied by an attendant, except in the following cases:
- where the transporter performs the functions of attendant
 - where the consignor has appointed an agent to care for
 - the animals at appropriate staging points.
7. Animals shall only be loaded into means of transport which have been thoroughly cleaned and where appropriate, disinfected.

No person shall allow bovine animals to be transported unless the floor area allowance detailed in following tables is adhered to.

Approximate liveweight (in kg)	Area in m ² per animal
50	0.3 - 0.4
110	0.4 - 0.7
200	0.7 - 0.95
325	0.95 - 1.30
550	1.30 - 1.60
Greater than 700	Greater than 1.6

8. Unweaned calves which are still on a milk diet, shall, after a maximum of 9 hours of transport, be given a rest period of at least 1 hour sufficient in particular for them to be given liquid and if necessary fed. After this rest period, transport may continue for a further 9 hours. At the end of such transport, calves shall be unloaded, given a feed adapted to their physiological needs, watered, and rested for at least 24 hours. Transport may recommence 24 hours after unloading.
9. Bovine animals, other than those referred to above shall after 14 hours of travel be given a rest period of at least 1 hour sufficient for them in particular to be given liquid and if necessary fed. After this rest period transport may continue for a further 14 hours. At the end of such transport, shall be

unloaded, fed and watered and rested for 24 hours. Transport may recommence 24 hours after unloading.

- 10.** In the case of transport by sea in a road vehicle on a regular and direct link between two geographical points of the European Union, a rest period of 12 hours shall be provided after the animals are unloaded at the port of destination or in its immediate vicinity, unless the journey time at sea is such that the voyage may be included as part of the general scheme set out in this subparagraph. In any event, such animals shall be watered.
- 11.** In the interest of the animals, the journey times provided in subparagraph (2) may be extended by 2 hours, taking account in particular of proximity to the place of destination.

APPENDIX 4. LIST OF LEGISLATION ASSOCIATED WITH ANIMAL WELFARE

Diseases of Animals Act, 1966 and Regulations made under the Act.

European Communities (Registration of Bovine Animals) Regulations, 1996.

Provisions for disposal of fallen animal.

Diseases of animals (Protection of Animals During Transport) Orders, 1995 and 1997.

Protection of Animals kept for Farming Purposes Act, 1984.

Welfare of Calves Regulations, 1995 and 1998.

Animal Remedies Act, 1993.

Animal Remedies Regulations, 1996.

APPENDIX 5. RELEVANT MAFF PUBLICATION ON ANIMAL WELFARE

Animal welfare at livestock markets: a pocket guide. The 1998 strategy for the protection of animal welfare at livestock markets. MAFF, 1998.

Explanatory guide to the Welfare of Animals (Slaughter or Killing) Regulations, 1995. MAFF, 1996.

Farm fires: advice on farm animal welfare. MAFF, 1991, amended 1993.

Guidance on the transport of casualty farm animals. MAFF, revised, 1998.

Lameness in beef cattle and dairy followers. MAFF, 1992.

Summary of the law relating to farm animal welfare. A new edition of this booklet, first published in 1992. MAFF, 1995.