



**Farm Animal Welfare  
Advisory Council**

# ***Animal Welfare Guidelines for Dairy Herds***



Department of  
**Agriculture,  
Fisheries and Food**

An Roinn  
**Talmhaíochta,  
Iascaigh agus Bia**

# **Table of Contents**

<b>1. The Five Freedoms</b>	4
<b>2. Stockpersonship</b>	6
<b>3. Feed, Water and Housing</b>	7
a. Grass based milk production	7
b. Planning the feed supply	7
c. Feeding indoors	8
d. Water	9
e. Housing	9
f. Shelter	9
<b>4. Handling and inspection of dairy cattle</b>	10
a. Frequency of inspection	10
b. Handling and herding	11
c. Transport off farm	11
d. Handling facilities	11
e. Restraint/identification	11
f. Mixing dairy cattle	12
<b>5. Animal Health and Welfare Management</b>	13
a. Herd health and welfare programme	13
b. Record Keeping	13
c. Biosecurity*/hygiene	13
d. Mastitis	13
e. Lameness	14
f. Painful procedures	15
I. Disbudding	15
II. Dehorning	16
III. Castration	16
g. Parasite control	17
h. Oral Dosing	17
i. Injections	17
<b>6. Reproduction and calving management</b>	18
a. Selection of animals for breeding	18
b. DIY Artificial Insemination	18
c. The 'transition period'	18
d. Calving	19
e. Calving facilities	19
<b>7. General management</b>	20
a. Roadways	20
b. Milking	20
c. Care of sick, injured animals	22
d. Care of the 'Downer cow'	22
e. Culling and euthanasia	22
Appendix I Housing	23
Appendix II: List of Legislation and Information Links associated with Animal Welfare.	25
Appendix III Behavioural principles of animal handling	26
Appendix IV; Disbudding	27

# Introduction

---

There is growing agreement that welfare is an important component of the social sustainability of modern animal production systems. Under the **One Health**, and more recently the **One Welfare** concept (which encompasses health), the welfare of the farmer and his or her animals are mutually inclusive. The need for work routines and facilities that promote a safe working environment for farm workers is a basic requirement of physical health. Importantly the Health and Safety of personnel should be addressed in the farm safety statement which is a statutory requirement of the Safety, Health and Welfare at Work Act, 2005. (Safety, Health and Welfare at Work (General Applications) Regulations, 2007-2016).

Recent changes in the dairy industry emphasise the importance of mental and other aspects of the physical health of farm personnel. Features of modern Irish dairying include larger herd sizes, challenges in acquiring skilled labour and volatility in milk pricing. Combined with management practices such as compact calving, constraints on investment in infrastructure and handling facilities and unpredictable weather it is easy to appreciate how the demands of work may be greater than the person's ability to cope. This may lead to work related stress, a more hazardous working environment and ultimately a risk to the welfare of animals. A person experiences stress when they perceive that the demands of their work are greater than their ability to cope. Their ability to cope with that stress varies depending on age, physical and mental fitness and the nature/structure of their social support network (family, friends, discussion groups, advisors etc.). Any decision to expand a herd must start with consideration of one's own ability to cope with the extra demands and on the ability of the enterprise to employ and source trained extra help when needed.

In the event of an emergency a 'contingency plan' is seen as a vital aspect of protecting the welfare of dairy cattle, and under the 'One welfare' concept, the dairy farmer. Typically such plans relate to weather related emergencies (flooding, storms/snow and drought) and fire. However, the need for emergency staff to care for animals in the event of injury, death or illness should also be considered in such plans. Farmers should make an assessment of the risks of their susceptibility to extreme weather events and develop contingency plans for these events. At a minimum the plan should outline the protocol to be followed in respect of weather warnings (moving animals to higher ground etc.), the feeding and management regime followed on the farm and should include contact numbers (e.g. of the vet, family doctor, local veterinary office, advisor etc. Critically, the plan must outline how feed and water supply to the animals will be maintained.



# THE FIVE FREEDOMS

The Five Freedoms provide a framework that underpins best practice to ensure animal health and welfare at farm level and are listed below.

01

## ***Freedom from hunger, thirst and malnutrition***

- Absence of hunger;
- Absence of thirst.

02

## ***Freedom from discomfort***

- Comfort around resting;
- Thermal comfort;
- Ease of movement.

03

## ***Freedom from pain, injury and disease***

- Absence of injuries;
- Absence of disease;
- Absence of pain.

04

## ***Freedom to express (most) normal patterns of behaviour***

05

## ***Freedom from fear and distress***

- Good human-animal relationship;
- Positive emotional state.



## **In acknowledging these freedoms, those who take care of dairy livestock should practice:**

- Provision of ready access to fresh water and a diet to maintain full health and vigour;
- Provision of an appropriate environment including shelter and a comfortable resting area;
- Appropriate design of housing and handling systems;
- Caring and responsible planning and management;
- Skilled, knowledgeable and conscientious stockpersonship;
- Considerate handling to minimise fear and stress;
- Prevention, rapid diagnosis and treatment of disease;
- Minimisation of pain associated with procedures such as disbudding;
- Provision of sufficient space and company of the animals' own kind to minimise social stress;
- Established animal based measures to monitor and identify health and welfare problems in the dairy herd;
- Humane transport and slaughter.



# Stockpersonship

Stockpersonship is a key factor in assuring optimal animal welfare. A good stockperson is conscientious, diligent and patient. They are empathetic and will also have acquired specific animal husbandry skills either developed on-farm, working with an experienced, competent stockperson in addition to a course offered by a suitable training organisation. Wherever possible, the training should be of a type that leads to formal recognition of competence.

## A competent stockperson must:

- Be familiar with the Five Freedoms and the concept of a life worth living, and be knowledgeable about animal welfare and relevant legislation;
- Be calm, patient, confident and handle animals with care, avoiding undue stress
- Have a thorough understanding of normal behaviour and understand the significance of changes in the behaviour of dairy animals;
- Recognise whether or not animals are in good health (signs of ill health include: loss of appetite, listlessness, cessation of rumination, abnormal discharge from eyes or nostrils, dribbling, persistent coughing, wheezing, high respiratory rate, lameness, swollen joints, scouring, rapid loss of condition or emaciation, excessive scratching, abnormal appearance of skin or other abnormal conditions), reduced milk yield, altered milk colour or consistency (i.e. mastitis), faecal consistency;
- Recognise when veterinary intervention is required;
- Develop and implement a herd health and welfare programme addressing common conditions on farm, setting target levels and preventative actions. This includes vaccination programmes, recording of sick animals, culled animals and the reason for culling;
- Develop and implement appropriate animal feeding and grassland management programmes;
- Understand the season specific environmental requirements (indoors and outdoors) of dairy animals for the promotion of good health and welfare;
- Have management skills appropriate to the scale and technical requirements of the production system.

## See Teagasc calf rearing manual:

<https://www.teagasc.ie/publications/2017/teagasc-calf-rearing-manual.php>



# Feed, Water and Housing

At a minimum dairy cattle of all ages must receive sufficient quantities of food and nutrients to enable them to maintain good health; meet their physiological requirements; and minimise metabolic and nutritional disorders. There are a wide variety of factors to be accounted for when considering the nutrition of dairy cattle including animal (physiological status, age, sex, size, body condition, growth rate, milk yield, health status, genetics), management (shelter, feeding/milking frequency, previous feeding levels), feed (nutritional composition, quality) and environmental factors (climate, season, weather, farm layout/walking distances). Given that there is such a variety of factors to be considered and that there is natural variation in the needs of individual animals, it is not possible to specify the complete range of quantities and nutrients required. Rather nutritional regimes and feeding levels should be informed by regular body condition scoring and weighing of dairy cattle and ruminant nutrition indicators, e.g. faecal consistency, milk fat, protein ratio and time spent ruminating. Farmers are advised to make a nutrition plan and to review it regularly.

## a. Grass based milk production

Both pasture (and grass silage) quality and quantity are climate and weather dependent. The dairy farm manager needs to be aware of the welfare and productivity problems this can create and plan accordingly.

Particular consideration should be given to the following:

- The marked increase of feed (energy) requirements above maintenance levels in late pregnancy (see transition cow section);
- The high levels of feed a lactating cow needs to maximise milk production and minimise the weight loss that may detrimentally affect her health, welfare and fertility;
- The high feed requirements of growing dairy cattle;
- The increase in an animal's requirement for feed / energy during cold, wet and windy weather;
- That pasture/grass silage may not be of sufficient quantity or quality during certain times of the year to meet these energy requirements;
- That supplementary feeding is required and that provision needs to be made for times of expected shortfall;
- That certain plants (e.g. catch crops) can pose a risk to animal health.

## b. Planning the feed supply

A plan for the supply of feed should be developed each year. It should include provisions for periods of limited pasture growth and for the possibility of drought and prolonged, cold, wet conditions in the spring and during recovery from these times.

## BCS recommendations (1 to 5 Scale)

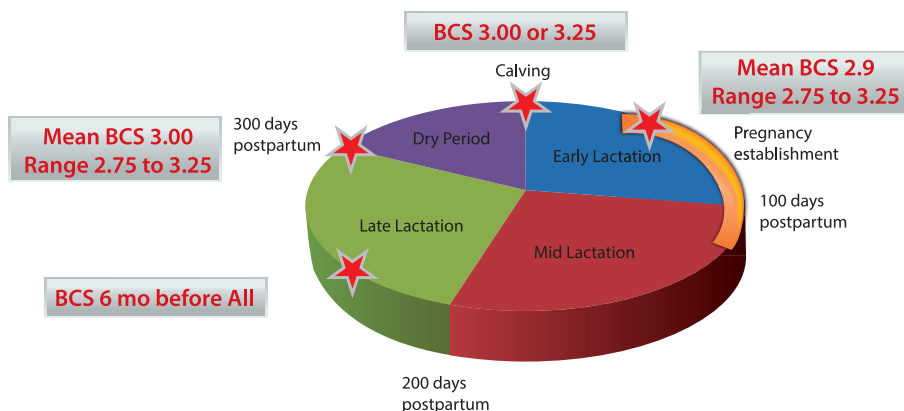


Figure 1 Source: Teagasc

[https://www.teagasc.ie/media/website/animals/dairy/Repro\\_levyinaction.pdf](https://www.teagasc.ie/media/website/animals/dairy/Repro_levyinaction.pdf)

### c. Feeding indoors

Dairy cattle synchronise their behaviour so it is important that they can all access the feed face simultaneously. If simultaneous access to the feed is impeded young/subordinate cows will stand around waiting for a place at the feed face and there will be an increase in aggression as cows compete for access to the feed. Both are risk factors for stress and lameness. At a minimum adult cows should be provided with at least 60cm but preferably 75cm each of feed space allowance (1m for transition / freshly calved cows) and the feed should always be easily accessible.

#### Recommended best practice:

- Gradual introduction of concentrates and sufficient roughage to promote rumination and prevent acidosis;
- Balanced mineral-vitamin mixtures should be provided to cows pre- and post-calving during the winter months;
- Magnesium supplements should be provided during the spring and autumn to prevent grass tetany (hypomagnesaemia) in recently calved cows;
- A low calcium diet should be fed pre-calving to avoid hypercalcaemia;
- The feeding area should be well illuminated to encourage cattle to feed;
- The feed face should be long enough to enable all cattle to feed at the same time;
- Shoulder length dividers should be provided to prevent dominant cows from blocking other cows from accessing the feed;
- Rubber flooring should be provided at the feed barrier to improve cow comfort while feeding. This encourages longer feeding times and reduces the risk of lameness.

## **d. Water**

Water availability and quality is crucially important to the health and welfare of dairy cattle. At a minimum all dairy cattle (including calves) should have continuous, unrestricted access to a clean fresh water supply all year round. If animals are observed queuing for access to water this is a clear behavioural sign that 1) water facilities are absent elsewhere (e.g. at pasture, or in the parlour yard) or 2) are inadequate (lack of drinking space/ drinkers, poor water pressure).

### **Recommended best practice:**

- Water troughs/drinkers cleaned regularly and water quality tested periodically;
- Water troughs/drinkers inspected daily to ensure that they are fully functional and that flow rates are appropriate to demand;
- Water sources protected or raised high enough (e.g. 750mm high) to prevent fouling by other animals or by wildlife such as badgers;
- Water supply designed to minimise the risk of the water freezing;
- At pasture water sources positioned in close proximity to the cows grazing area.

## **e. Housing**

Housing presents certain challenges to dairy cows in terms of social stress (remixing and higher stocking density than at pasture), increased exposure to infectious agents, generally less comfortable underfoot and lying conditions than at pasture and a change in diet. In Irish spring calving systems, all the cows in the herd are heavily pregnant together during the winter housing period. This places additional requirements on their need for space and comfort compared to cows in year round calving systems. Design of the winter housing is critical (see Appendix I).

## **a. Shelter**

In Irish pasture based systems of milk production dairy cattle are exposed to the effects of the weather while at pasture during the grazing season. Provided they are fed and sheltered well dairy cattle tolerate variations in the weather very well. Nevertheless, occasions arise when weather extremes can create welfare risks related to hyper- or hypothermia which can lead to suffering and in extreme cases death. If cattle are seen with hunched backs and huddling and shivering together they are showing signs of cold exposure. If exposed to heat stress, caused by consistent ambient temperatures of 20–22 degrees centigrade, they will increase their respiration rate, reduce their grazing activity, and hence their feed intake, seek shade, and drink more. If the heat load continues to rise, animals will progress to open mouthed panting with tongues extended when severe.

At a minimum shelter from wind and rain should always be provided particularly for young stock outdoors for the first time and for all out-wintered dairy cattle. Shelter/shade can be in the form of hedgerows, trees, buildings, windbreaks or topographical features. Consideration should also be given to the provision of shade for dairy cattle outdoors during hot weather in the summer. Other ways of reducing the heat load on cows during hot weather conditions include:

- Plentiful provision of drinking water;
- Use of paddocks close to the milking parlour;
- Movement of animals at their own pace (best practice irrespective of the weather);
- Sprinkling water on the cows in the parlour yard;
- Once a day milking in the morning.

# Handling and inspection of dairy cattle

## a. Frequency of inspection

All dairy cattle should be inspected individually at least once per day with the main objective of ensuring that they are in good health and have ad lib access to food and water. Particular categories of animals require more frequent inspection e.g. young calves (which will be dealt with in detail in a separate booklet), cows close to calving, those that have recently calved, or sick/injured animals and downer cows. Careful inspection is essential when cows are being grazed on restricted areas, when nutritional related conditions such as bloat are likely to occur (e.g. on clover pastures) and during periods of inclement weather. Detection of conditions such as lameness requires more routine, focused inspection of dairy cow locomotion/gait on a regular (i.e. monthly) basis.

The challenge of larger herds and fewer labour units means that the use of automated tools such as pedometers, accelerometers, sound and image monitors and sensors is increasing. These can measure changes in dairy cattle behaviour to facilitate management or can record environmental parameters. Where automated tools have been developed to provide 'real time' updates (e.g. via phone apps) they may have a role in 'precision livestock farming' (PLF) whereby they can act as an early warning system. PLF tools should be used to complement and support the skills of the farmer and not to replace them.

## b. Handling and herding

It is important that young dairy stock are handled positively from a young age to reduce fearfulness, create a positive human-animal relationship and thus improve animal welfare and ease of handling when they enter the milking herd. It is also important to understand the behavioural principles of handling cattle which refers to the flight zone; blind spot and point of balance (see Appendix 11)

### General principles of good handling:

- Keep animals calm by handling them quietly with patience and confidence – Calm animals are easier to move and load. When animals become agitated, it takes up to 30 minutes for them to calm down;
- Move animals at a walk – Injuries from falls or collisions with gates/fences are more likely if animals are rushed;
- Minimise noise (shouting, whistling etc.) during handling as it is a source of stress;
- Electric prods, whips and tail twisting should never be used to handle dairy animals – A flag or paddle stick or other non-electric aid should be the primary handling tools for loading/unloading animals or to encourage animals into a crush;
- Ideally you should always have help when handling dairy cattle;
- Avoid moving dairy cattle from bright into darkly lit areas. They need to see where they are expected to move to, i.e. if going indoors or into a truck the area should be well lit and corridors clear;
- Never rush cows when herding. Rushing cows at the rear of the herd will not speed up the time of arrival of the leader cows to the milking parlour and is a major risk factor for lameness;
- Dogs should not be used for herding cows as they scare them and increase the risk of lameness;
- If using a mechanised means of herding (tractor/quad) stay well behind the last cows and allow them to walk at their own pace.

### c. Transport off farm

When selecting animals for transport off farm consult the FAWAC Transport Document and any relevant legislation (see Appendix II). Pay particular attention to cull dairy cows and young calves, particularly at transport to slaughter where there is a significant risk to their welfare. In general, transportation times (measured from the first animal loaded to the last animal unloaded) for calves, pregnant, peak lactation and cull dairy cows should be as short as possible.

#### At a minimum:

- The person in charge should examine the cattle prior to transport, to ensure that they are fit and healthy for transportation;
- All dairy cattle, including calves, must be able to stand and bear weight on all four limbs and be fit enough to withstand the journey without suffering unreasonable or unnecessary pain or distress;
- If a pregnant animal is close to calving she should not be transported;
- Unweaned calves must have been fed at least half of that day's ration of colostrum or milk, not more than two hours before transportation.

### d. Handling facilities

Handling facilities are important to facilitate milking and restraint for artificial breeding, health care (dosing/vaccinations) and veterinary treatments such as foot trimming. At a minimum such facilities must be constructed, maintained and operated in a manner that allows animals to move through comfortably and minimises the likelihood of distress or injury to the animals or stockperson. Additionally facilities should encourage calm and consistent handling routines for cows around milking as this results in faster milk let-down, shorter milking duration and less-frequent dunging and urination in the parlour.

#### Recommended best practice:

- The surface of yards and races should have non-slip surfaces and be easily cleaned;
- Fences, gates and loading ramps should encourage good animal flow and loading ramps should have non-slip footing and side boards or rails to prevent animals falling off or getting their legs trapped;
- Farms should have a well-designed drafting system to minimise stress when separating cows out from the herd;
- Head bails and crushes should allow for easy release to avoid choking;
- Backing gates should be operated to reduce yard size as the number of cows waiting to be milked decreases and not to push cows into the parlour;
- Audible (not loud) alerts (such as a bell) should be used to warn cows that the backing gate is advancing.

For more information go to Teagasc Dairy Farm Infrastructure Handbook or see **Health and Safety Authority Safe Handling of Cattle on Farms** document.

### e. Restraint/identification

Dairy cattle often need to be restrained to perform husbandry procedures such as tagging, pregnancy diagnosis, vaccinating or dosing. Stress and risk of injury to the animal must be minimised. Restrained animals should be supervised closely and restrained in a manner that facilitates fast and easy release. Tongs and equipment used for dairy cattle restraint must be fit for purpose and used in a manner that does not inflict unnecessary pain or distress.



Permanent identification by ear tag is mandated by DAFM. Other forms of identification such as freeze branding should only be performed by a competent operator. Permanent tags should be inserted using the applicators designed for the purpose and according to the manufacturer's specifications. Care should be taken when tagging to avoid hitting the cartilage ridges or major blood vessels. Infection around the tag area should be treated promptly.

#### **f. Mixing dairy cattle**

A dominance hierarchy exists in all groups of dairy cattle such that there are dominant and subordinate animals within the group. Introduction of unfamiliar animals or removal of animals from a group disrupts the dominance hierarchy and causes social stress and fear arising from an increase in aggression. Animals attempting to get away from an aggressor are at increased risk of slipping, tripping or falling and incurring an injury. Injuries and stress can also occur due to mounting behaviour caused by mixing heifers and steers together in the same pen or in adjoining pens as heifers in heat attract the attention of the steers.

#### **Recommended best practice:**

- Minimise introduction of unfamiliar animals into the dairy herd and re-mixing of unfamiliar younger animals;
- Unfamiliar cattle should be mixed in spacious conditions, with non-slip, non-injurious underfoot conditions;
- Newly mixed animals should be observed closely, particularly in the first few hours and be prepared to remove animals under severe social stress (bullying);
- Freshly calved heifers should be kept together in small groups and introduced to the main herd in sub-groups (see also section on the transition cow).



# Animal Health and Welfare Management

## a. Herd health and welfare programme

It is essential that every dairy herd has a 'herd health and welfare programme' as an essential part of the management system. This should be drawn up in consultation with your vet and relevant advisor/s such as a nutritionist. The main components of such a programme include a parasite control/dosing and vaccination schedule, nutritional management, lameness and mastitis prevention protocols and a biosecurity plan. Further details on some of these are provided in the sections below. It is important that herd health and welfare problems are reviewed regularly with the farm veterinary practitioners and the herd health and welfare programme updated as appropriate.

## b. Record Keeping

The FAWAC recommend record keeping as an important management tool. Some of these records help producers to demonstrate that best practice has been implemented in relation to animal health, welfare standards and traceability.

**Key records include those relating to:**

- The Bovine Herd Register (Including disposal of animal carcasses);
- Animal remedies;
- Animal feed;
- Traceability;
- Disease events and control plans;
- Locomotion, body condition and any other relevant scores;
- General management plans.

**\*The keeping of records supports the Health and Welfare plan.**

## c. Biosecurity\*/hygiene

Biosecurity is a term that includes all those measures that may be taken to prevent the introduction of unwanted organisms into, within and out of the herd. (See Appendix II for link to Animal Health Ireland Biosecurity booklets). In brief, proper boundary fencing prevents contact with other groups of animals from neighbouring herds and reduces the risk of infectious disease transferring to the herd. Buying in stock from other sources should be minimised. Stockpersons who take proper precautions when moving within the farm or when moving stock and equipment can greatly reduce the chance of spreading disease. A foot-bath containing a Department of Agriculture, Food and Marine approved disinfectant\* should be provided not only the entrance to the calving houses and calf pens but also outside all access areas. A consistent hand washing/glove use protocol should be in place for all dairy farm activities but particularly around milking, calving and calf care/feeding duties.

## d. Mastitis

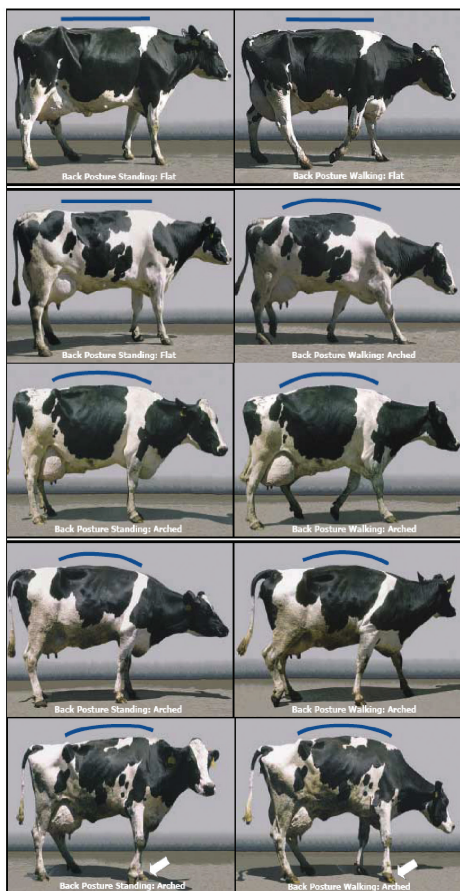
Mastitis is associated with pain and is therefore a major welfare concern for dairy cows. Treatment should include the use of non-steroidal anti-inflammatory drugs (NSAIDs) to assist pain relief. The causes of mastitis are complex and varied, but a good control programme can minimize problems and losses.

Key components include an effective treatment programme including pain relief for every case, teat dipping, dry cow therapy, hygienic housing conditions, and high standards of milking machine maintenance, recording of somatic cell counts (SCC), and culling of cows with high SCC. A hot wash area for visitors entering and leaving the farm is essential. See Animal Health Ireland **Cell Check** link.

*\*See Appendix II for link to list of approved disinfectants on DAFM website*

### e. Lameness

Lameness is a major welfare concern for dairy cows. It is a painful condition that warrants immediate and appropriate treatment. In Irish milk production systems, dairy cows are exposed to risk factors for lameness associated with housing and pasture. Housing risks are often associated with prolonged standing by cows due to too few/too small or unbedded cubicles and inadequate feed and water space often compounded by poor hygiene indoors. Risks associated with pasture relate to long walking distances, poor herding practices (e.g. rushing cows) and poor roadway/track design and maintenance. There are also lameness risks related to nutrition and genetics. Like most multifactorial diseases prevention is better than cure.



1. Standing and walking.

2. Standing flat and walking arched.

3. Standing and walking arched.  
Gait is short strided.

4. Standing and walking arched.  
Cow favours one or more legs/feet.

5. Standing and walking arched. Cow demonstrates an inability, or extreme reluctance to bear weight on one or more limbs/feet

Example of a locomotion scoring scale (Sprecher et al., 1997). During standing and walking, based on back posture, and stride length where appropriate, cows can be scored from sound (score 1) to severely lame (score 5).

### **Recommended best practice:**

- All cows should have their hooves inspected and judiciously trimmed by a trained hoof trimmer at least once per year;
- Regular foot bathing, particularly during housing, but also while at pasture and using appropriate products at correct dilutions is critical in controlling infectious causes of lameness and heel erosion;
- Dairy cows should be locomotion scored post-milking on a regular basis (e.g. monthly) for early lameness detection; scores also inform the success of other methods of preventing lameness such as hoof trimming, foot bathing and selective breeding;
- When an animal is found lame the affected foot should be carefully examined immediately; if severe, or the cause of the lameness is not obvious she should be seen/ treated by a trained foot trimmer or veterinarian;
- Lamé cows should be isolated from the herd on soft underfoot conditions and restricted from walking until the lameness resolves;
- Lamé animals not responding to treatment should be culled; euthanasia should be considered for severely lamé cows not responding to treatment within 3 days;
- Non-steroidal anti-inflammatory drugs (NSAIDs) should always be used to assist pain relief and recovery.

Correct hoof trimming and appropriate use of hoof blocks is of primary importance in the treatment of claw horn lesions. This is occasionally supplemented with antibiotics where evidence of infection has been detected by a veterinary practitioner.

---

## **f. Painful procedures**

Dairy farming involves a number of husbandry procedures such as disbudding, dehorning and castration which cause pain and distress. The docking of calves tails is prohibited and must not be carried out. S.I. No. 225 of 2014 Prohibition on Tail-docking (Bovines) (No. 2) Regulations 2014 refers. (See Appendix II for link to Regulations).

### **1. Disbudding**

Disbudding is painful for calves but it is less stressful than dehorning older animals. Disbudding of calves is carried out to reduce injuries to humans and other animals. The only method of disbudding of calves that is legally permissible in Ireland is disbudding by thermal cauterisation- as is set out in S.I. No. 127/2014 - Animal Health and Welfare (Operations and Procedures) (No. 2) Regulations 2014.

It is illegal to disbud or dehorn calves over 14 days old without using a local anaesthetic (see paragraph on castration on Page16).

### **Best practice recommendations:**

- A custom-built calf disbudding crate should be used to minimise stress to the calf and for optimum safety to the operator;
- Local anaesthetic (LA\*) and an NSAID should be administered to all calves undergoing disbudding.



*\*LA products are prescription only medicines and may be administered or prescribed by veterinary practitioners for animals under their care. The owner/person in charge should have appropriate training in the usage of the anaesthetic and may administer it for disbudding on foot of a prescription from a veterinary practitioner.*

Figure 2: Correct Procedure for disbudding of calves. Courtesy DAFM

See Appendix IV for more information regarding disbudding.

## II. Dehorning

A veterinarian should only carry out dehorning in exceptional circumstances. Handling facilities should provide adequate restraint to minimise stress to the animal. Appropriate pain relief (local anaesthesia/analgesics) must always be administered. Dehorned animals should be checked regularly to ensure that bleeding has ceased or has not started since dehorning.

## III. Castration

Castration must be carried out in compliance with S.I. No. 127 of 2014 (Animal Health and Welfare (Operations and Procedures) (No 2) Regulations 2014. Under this legislation cattle can be castrated:

- By a veterinary practitioner at any age;
- Using a burdizzo (with or without the use of anaesthesia and analgesia) up to six months;
- Using a rubber ring up to seven days (with or without the use of anaesthesia and analgesia) in both cases.

Younger calves may experience less acute responses to castration than older calves.

### Recommended best practice:

- Anaesthesia and long-acting analgesia (i.e. NSAIDs) should be used with all methods of castration for calves at all ages;
- Where calves are castrated by Burdizzo without the use of anaesthetic, they should be castrated as young as possible and certainly no older than two months of age.

### g. Parasite control

Parasite infections can cause poor welfare in dairy animals because of discomfort from irritations, loss of body condition and ill health. Therefore prevention and control are important considerations in the welfare of all livestock. External parasites or ringworm, resulting in skin irritation, cause the animal to scratch and be uncomfortable. Internal parasites including stomach worm, lungworm (hoose), liver fluke and coccidia unless appropriately treated will result in morbidity and even mortality.

#### **It is recommended that:**

- Husbandry and grassland management practices should aim to minimise parasite problems where practical (e.g. moving calves to “clean” pasture in midsummer to reduce exposure to stomach worms);
- Preventative parasite control programmes (e.g. lice treatment in housed stock, anthelmintic treatments for young calves at pasture) are implemented to prevent undue parasite burdens in susceptible stock bearing in mind responsible use of anthelmintics;
- The effectiveness of a Parasite Control Programme can be measured by referring to the Animal Health Ireland Website: <http://animalhealthireland.ie/>

### h. Oral Dosing

#### **Particular care should be taken to ensure that:**

- Dosing equipment used is clean, in good condition and correct working order and appropriate for the size of the animal;
- Dosing guns should be properly calibrated;
- Where available consideration is given to the use of a sheep crook style dosing gun which avoids injuring the animals’ throat;
- Consideration is given to the use of alternative suitable product formulations e.g. “pour on” treatments to minimise handling stress.

### i. Injections

Careless use and administration of injectable materials as well as the failure to remove broken needles can lead to poor animal health and welfare, carcase damage and potential food safety problems.

#### **It is recommended that stockpersons:**

- Ensure that animals are restrained correctly and adequately in a manner that minimises stress;
- Adhere to manufacturer recommendations for dosage rates and injection procedures
- Maintain strict hygiene standards during injection;
- Use single use (disposable) needles and syringes;
- Dispose of broken needles in a safe hygienic manner.





# Reproduction and calving management

## a. Selection of animals for breeding

Before the first insemination, dairy cattle should be of suitable age, size and condition for pregnancy and calving in order to minimise the risk of dystocia. Heifers should be on target to reach full maturity at calving. Choice of bull is also important to ensure appropriate calf size and the avoidance of a long gestation period. Easy-calving bulls should be selected for heifers. When selecting bulls for breeding, consideration should be given to:

- The physical size of the bull relative to the heifers/cows to be bred (for heifers, use a bull breed that is smaller than the dam breed);
- The likely size of the offspring relative to their dams and the housing system that they are going to enter;
- The temperament of the bull;
- The health and welfare of the bull (including the bull to cow ratio).

## b. DIY Artificial Insemination

Farmers wishing to undertake DoItYourself (DIY) artificial insemination of cows are required to complete a Department of Agriculture approved training course and hold a valid DoItYourselfArtificialInsemination (DIYAI) licence.

## c. The 'transition period'

Dairy cows are particularly vulnerable to welfare challenges during the transition period (three weeks before and three weeks after calving). Calving is an extremely stressful event for the cow and this is exacerbated by lower immunity, commencement of lactation, joining the milking herd and dietary changes. Management of the transition cow diet is very important for maintaining the overall health of the dairy cow. During this period, in addition to lowered immunity, cows will generally experience negative energy balance. This is where feed intake does not meet the energy requirements of the cow. In late pregnancy feed intake decreases, whilst at the same time the cow's nutritional requirements increase due to the growing calf. After calving, her energy requirement increases further, with energy required for both maintenance and milk production but her appetite remains depressed and feed intake increases gradually. The combination of negative energy balance and decreased immunity are the potential precursors of many metabolic and infectious diseases often seen soon after calving, i.e. uterine infections, mastitis, milk fever, ketosis, fatty liver disease and displaced abomasum.

### Recommended best practice:

- Minimise stress during the transition period;
- Cows should be kept in a transition group three to five days prior to calving and for up to five days after calving, before joining the main milking herd. This is particularly important for in-calf heifers which are particularly susceptible to social stress;
- A balanced dry cow mineral should be fed;
- The nutritional composition of the silage should be analysed;
- Cow body condition score should be monitored closely during the transition period, so that an appropriate diet can be provided to minimise the effects of negative energy balance;



- New feeds should be introduced into the diet gradually i.e. over a seven - 10 day period.

#### **d. Calving**

Compact calving is an important management tool to match milk production to grass growth. However, it can pose a threat to animal health and welfare because of the high proportion of vulnerable animals (i.e. neonatal calves and peri-parturient cows) in the herd at one time. This can be compounded by labour and facility challenges. Obviously clean and well maintained calving facilities and equipment are of paramount importance to cow and calf health and welfare. The maintenance of body condition score\* within the range 3.0 to 3.5 for the cow at calving is crucial to prevent calving problems. The breeding policy should minimise the need for caesarean sections but if one is required it should be undertaken by a veterinary practitioner with access to adequate help and proper facilities.

#### **Recommended best practice:**

- Cows close to calving should be checked twice daily and moved to the calving facilities before calving commences to minimise stress;
- If a cow, and particularly a heifer, has already started calving when checked it is best not to move her until the waterbag or foetal hooves are visible;
- If in any doubt about how a cow is progressing you should call the vet as rushing to assist when the cervix and vulva are not fully open is detrimental to the cow (see AHI doc on Calving and care of the newborn calf for detailed information on when and how to intervene).

Excessive force should never be used when calving cows; routine use of calving jacks is not recommended and should only be used on veterinary advice; poor technique can inflict severe injuries to both the cow and the calf;

- If using ropes to assist calving, make sure that they are applied above the calf's fetlock and only pull on them when the cow is forcing (pushing or contracting); rotate the calf after the chest emerges;
- Ensure the calf is fed at least three litres of colostrum within two hours of birth (see AHI Colostrum Management information);
- Dress the navel cord as appropriate (see AHI leaflet on Calving and care of the newborn calf) and check it regularly for signs of infection during the calf's first week of life.

#### **e. Calving facilities**

It is essential to have sufficient calving facilities. At a minimum all calving facilities should be clean, well-bedded, well-illuminated and have a plentiful supply of clean water. They should never be used to house sick animals. Loose pens, wood chip pads or paddocks can be suitable for calving provided they are well managed. The size and number of calving boxes depends on the number of cows in the herd and the calving pattern of the herd.

#### **Recommended best practice:**

- a. Individual straw bedded calving boxes (one 4m x 4m pen per 25 cows) according to calving pattern;
- b. Calving facilities equipped with a self-locking restraining gate;
- c. Non-slip rubber flooring on all access areas.

# General management

## a. Roadways

Poorly designed or maintained roadways are not only detrimental to hoof health but also to cow flow. Herding cows from the paddock to the parlour is one of the most time consuming tasks on most dairy farms and stony, flooded, uneven, narrow and mucky areas of farm roadways significantly increase herding times and the risk of lameness and stress for the cows. This is mainly because cows are reluctant to walk on such surfaces for fear of damaging their feet and they become hesitant. Indeed cows prefer to walk with their heads down to check where they are placing their feet; they can only do this if allowed to walk at their own pace. Roadways should be upgraded annually during the winter when the cows are housed. At a minimum the top dressing should be replaced regularly to provide a smooth surface for cows to walk on. Great care should be taken at the junction between farm roadways and concrete yards. If a cow stands on a stone carried onto the concrete from the muddy junction the risk of penetration of the foot is high. Consider using woodchips or rubber mesh for the last few metres of farm roadway so the stones are knocked off the cow's feet before they stand onto the concrete.

See below links for more information:

*Dairy Farm Infrastructure Handbook*

*Farm Roadways Design and Construction*

## b. Milking

The milking routine not only has an important bearing on the efficient and hygienic removal of milk from the udder but is also important for the good health, welfare and productivity of the dairy cow. The modern dairy cow produces more milk than a calf could ever consume and so regular milking is an important requirement of good udder health. While cows in Ireland are traditionally milked twice daily there is a growing interest in once a day milking at various stages of the production cycle as a management tool and a limited number of dairy farmers milking three times per day. In addition there is growing use of automatic milking systems (i.e. robots) in which cows present themselves voluntarily for milking. Irrespective of the milking frequency the same basic principles for good cow welfare apply:

- A calm and regular milking routine is essential to ensure that a complete milk ejection reflex occurs in the cow prior to and during milking
- Cows should be milked frequently enough to minimise discomfort and maintain udder health (at least once every 24 hours)
- Milking equipment should be well maintained and cleaned to minimise the risk of damage to and infection of the teats and udder

The nine components of an efficient milking process are as follows:

- |   |                       |
|---|-----------------------|
| 1. Parlour preparation;                                 | 7. Teat disinfection; |
| 2. Row filling;   | 8. Row exit; and      |
| 3. Preparation for milking;                             | 9. Parlour hose down. |
| 4. Preparation in batches and maximising milk let down; |                       |
| 5. Cluster attachment;                                  |                       |

## 6. Cluster removal;

When employing an efficient milking routine, milkers can achieve somatic cell count (SCC) and total bacterial count (TBC) levels of less than 100,000 and less than 10,000 cells per ml respectively and milking row times of less than 9 minutes. Seek professional help if this is not being achieved. Behavioural signs of discomfort or distress in cows at milking include excessive defecation, restlessness or the absence of rumination and may indicate problems with the machinery or stray voltage.

### **Recommended best practice:**

- Milking machinery should be tested once per year and more frequently as indicated by milking speed, teat damage and/or cow behaviour;
- Teat ends should be regularly inspected for damage;
- Teats should be disinfected after cluster removal after every milking;
- Heifers should be familiarised with the milking facility prior to calving;
- In case of electricity failure there should be a generator to operate the milking machinery;
- Cows should be milked immediately after separation from their calves.

### **Note:**

Once a day milking can be useful in overcoming labour challenges or in managing lameness or poor body condition. In fact it can reduce lameness because of the reduction in walking. Nevertheless, increased udder pressure may cause discomfort or even pain and distress and could increase the risk of mastitis. Therefore cows should be selected carefully for once a day milking.

## **Drying off**

Cows are dried off at the end of their lactation or earlier if there are feed shortages. The aim is to stop milk production and to close off the teat canal as quickly as possible and causing as little discomfort as possible to the cow.

Recommended best practice:

- Cows should be milked less frequently prior to drying off;
- Cows should be put in a clean dry area well away from the milking area or other milking animals for the first few days after dry off;
- They should be monitored regularly for signs of udder swelling or redness for at least 3 weeks post dry off.



### **c. Care of sick, injured animals**

Every effort should be made to prevent lame, injured or sick dairy cattle from suffering. They should be treated or humanely destroyed/euthanised immediately if there is little chance of recovery. Primary treatment should involve isolating the animal into a bedded convalescent area with non-slip flooring and access to a clean water supply. Lame cows benefit from being kept near the milking parlour and/or being milked once per day. In the case of sick calves it is crucial that they are isolated from the main group as soon as possible and kept in an area specifically for sick calves. Once recovered the calves should not be introduced into groups of younger calves.

#### **Veterinary advice should be sought when:**

- There is a sick animal which does not respond to treatment;
- First aid does not result in satisfactory resolution of the problem;
- There is difficulty in calving a cow which the stockperson is unable to resolve;
- A cow is recumbent and unable to stand (i.e. 'downer cow' – see below);
- There is persistent lameness that does not respond to treatment.

### **d. Care of the 'Downer cow'**

The cause of the downer cow is multi-factorial, however careful management of downer cows is vital to avoid secondary trauma (pressure sores) associated with surface contact and poor circulation. The cow must receive veterinary attention within 24 hours of becoming recumbent (in the absence of milk fever), or be destroyed humanely by a veterinarian if there is little chance of recovery and disposed of to a knackery.

#### **Recommended best practice:**

- A downer cow should be kept on soft flooring and inspected frequently;
- The cow should be actively managed whereby she is kept in an upright position (i.e. lying on her sternum with legs tucked under the body), and prior to the use of a mechanical lift, a veterinary examination should be made to rule out conditions that will not respond and that will only increase pain and distress for the cow;
- A decision pathway should be in place to ensure a humane end point is decided upon without delay.

### **e. Culling and euthanasia**

Culling of dairy cows is inevitable to achieve genetic progress, optimise herd performance and minimise welfare problems. Ideally the majority of culling should be voluntary whereby a decision is made to cull a cow based on deterioration in her milk yield or old age. Usually the majority of culling is involuntary, caused by reproductive failure, mastitis and lameness. A decision to cull from the milking herd on the basis of the latter two should be done without delay as they are associated with poor welfare.

Unexpected and unforeseeable emergencies arise on dairy farms where animals experience severe pain or suffering that will become worse if they are not euthanised immediately. Stockpersons need to be prepared for these situations and follow a protocol outlined in the health and welfare plan.

# Appendix I: Housing

Housing provides shelter for dairy cattle and assists the farmer in caring for them during the winter. Housing also aids effective slurry and effluent control and provides labour efficient facilities for winter-feeding. While cubicles are the most common housing system for dairy cows in Ireland, they are also kept in straw bedded sheds. Housing of dairy animals in fully slatted pens is not advisable.

## Indoor environment

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. Accommodation for dairy cattle should contain sufficient sources of natural or artificial light. Artificial lighting is necessary in areas where young calves, cows in late pregnancy or sick animals are kept so that they can be thoroughly inspected. All buildings for dairy cattle should have a suitable smoke or fire alarm system installed in order to detect fire or smoke at an early stage.

## Cubicle design

Cubicle design should take into consideration the size, shape and weight of the cows. Inappropriate cubicle design can reduce a cow's lying time, which can predispose to lameness and may contribute to teat damage. A well designed cubicle permits a cow to stand comfortably with all four feet on the cubicle bed. It should be wide enough for the animal to rest without undue pressure on the body, which may restrict rumination, or cause damage to the legs and udder. There should be sufficient headroom for the cow to lie down and rise without difficulty. There should be a gentle downward slope from the front (head end) to the back, which will encourage a cow to lie facing uphill, so reducing rumen pressure on the diaphragm. It is also essential for drainage from the cubicle base. Badly designed cubicles lead to cows spending long periods standing or even lying, in the slurry passages or, standing half-in the cubicle with the hind feet in the slurry channel. Kerb height is most important as very high kerbs impose strain on the hind legs of animals which stand in this way. However, the kerb should not be so low that the bed of the cubicle becomes contaminated with slurry.

## Bedding

Cows require bedding to optimise their physical and thermal comfort while lying indoors and to keep them clean. Optimal cow comfort while lying will maximise lying times, minimise the risk of limb injuries such as capped hock and reduce the risk of lameness. Comfortable bedding offers cushioning properties which is particularly important when cows kneel to lie down. Cows demonstrate discomfort while performing this manoeuvre by repeatedly standing up from the kneeling position. Bedding should also ensure a dry and clean lying surface to ensure optimal hygiene (and therefore milk quality).

Whether bedding is provided in cubicles or in group pens a depth of at least 15-30cm is best. This is easily achievable in straw bedded systems while in cubicle systems sand or sawdust can be used. Deep non-abrasive sand is the gold standard both in terms of maximising cow comfort and milk quality. Cubicle beds of sand on lipped cubicle bases to a depth of 75-100mm are not deep enough to provide adequate cushioning

for the knees or comfort while lying and quickly become impacted. Similarly, rubber mats, carpets or mattresses on top of a concrete cubicle base, though the most common types of cushioning used on Irish dairy farms, do not optimise cow comfort while lying. All such forms of cushioning should be provided with some form of bedding on top in order to keep the teats, udders and flanks clean. Additionally, they should be raked and replenished frequently.

The use of lime, or similar proprietary products, on the cubicle base may lower the incidence of mastitis by reducing wetness and, in the short-term, killing bacteria. Cow's skin should not come into direct contact with such products as they can dry it out and cause cracking and chapping. Such skin conditions not only cause pain and discomfort but increase the risk of mastitis because they harbour bacteria.

### **Cubicle number**

It is most important that there is at least one cubicle per cow and ideally there should be 10% more cubicles than cows to optimise lying times. Subordinate animals (usually the heifers) benefit hugely from extra cubicles as they are often reluctant to lie down in cubicles beside older, dominant cows. Prolonged standing by such animals is a major risk factor for poor longevity arising from lameness, mastitis and reproductive failure.

### **Assessing cow comfort indoors**

The suitability of the bedding used indoors (cubicles and straw bedded systems) can be assessed by looking at cow dirtiness scores and at the number of cows in the herd with skin lesions (e.g. hair loss patches, lesions and swellings) especially on the limbs. The latter is also informative about cubicle design. Additionally aspects of cow behaviour can inform about the suitability of cubicle design and number. For example cows seen standing in the slurry passage or half-in cubicles suggests a design or comfort flaw in the cubicles and are likely to run an increased risk of lameness. Animals seen lying in the passageways or which refuse to use adequately bedded and designed cubicles may simply not have been trained to use cubicles as yearlings/heifers. They can become extremely dirty and run an increased risk of mastitis, abrasions to the hocks and lameness. Heifers should be introduced to a cubicle environment as yearlings and trained to lie in the cubicles prior to calving and joining the milking herd. The Cow Comfort Index (CCI - the proportion of cows lying in the cubicles), the Stall Standing Index (SSI - the proportion of cows standing in the cubicles) and the Proportion of Eligible cows Lying (PEL - proportion of cows that are not eating and that are lying down in the cubicles) can be calculated at different times of the day relative to milking. An SSI of >24% before the morning milking is consistently associated with lameness prevalence rates of >20%.

### **Passageways**

The accumulation of slurry in the passageways of a cubicle house can predispose to infectious foot problems and provides slippery underfoot conditions. It is important to minimise the amount of slurry, either by scraping out the passageways at least twice each day (manually or using an automatic scrapper) or by use of slatted passageways and by daily scrapping of manure from the cubicle base.

*Advice and specifications relating to housing for dairy cows are available from the Department of Agriculture and Food, Kildare Street, Dublin 2 and Teagasc, Moorepark, Fermoy, Co. Cork.*

## **Appendix II:**

### **List of Legislation and Information Links associated with Animal Welfare.**

---

There is no national or EU legislation specific to dairy cow welfare. However there is a body of national and EU regulations governing general animal health and husbandry. A current list of relevant legislation is available here or from the Animal Health and Welfare Division of the Department of Agriculture Food and the Marine, Kildare Street, Dublin 2. [animalwelfare@agriculture.gov.ie](mailto:animalwelfare@agriculture.gov.ie)

- Animal Health and Welfare Act 2013  
<http://www.irishstatutebook.ie/eli/2013/act/15/enacted/en/html>
- Animal Health Ireland link to Biosecurity Leaflets:  
[http://animalhealthireland.ie/?page\\_id=397](http://animalhealthireland.ie/?page_id=397)
- Animal Health Ireland Colostrum Management:  
<http://animalhealthireland.ie/?ahi-video=ahi-calf-health-emer-kennedy>
- Farm Animal Welfare Advisory Council (FAWAC) Best Practice for the welfare of Animals During Transport: <http://www.fawac.ie/media/fawac/content/publications/animalwelfare/BestPracticeWelfareAnimalsTransport.pdf>
- Health and Safety Authority. Code of Practice for preventing injury and Occupational ill Health in Agriculture.: [https://www.hsa.ie/eng/Publications\\_and\\_Forms/Publications/Agriculture\\_and\\_Forestry/Code\\_of\\_Practice\\_for\\_preventing\\_injury\\_and\\_occupational\\_ill\\_health\\_in\\_agriculture.pdf](https://www.hsa.ie/eng/Publications_and_Forms/Publications/Agriculture_and_Forestry/Code_of_Practice_for_preventing_injury_and_occupational_ill_health_in_agriculture.pdf)
- List of approved disinfectants on DAFM Website: <https://www.agriculture.gov.ie/animalhealthwelfare/diseasecontrol/disinfectants/>
- Locomotion Scoring of Dairy Cattle: adapted from Sprecher, D.J.; Hostetler, D.E.; Kaneene, J.B. 1997. Theriogenology 47:1178-1187 and contributions from Cook, N.B., University of Wisconsin
- S.I. No. 127 of 2014 ANIMAL HEALTH AND WELFARE (OPERATIONS AND PROCEDURES) (NO. 2) REGULATIONS 2014 <http://www.agriculture.gov.ie/media/migration/legislation/statutoryinstruments2014/SI127of2014.pdf>
- Transport off farm legislation: <https://www.agriculture.gov.ie/animaltransport/>
- Tail docking Regulations:  
<http://www.irishstatutebook.ie/eli/2014/si/225/made/en/print>



## Appendix III;

### Behavioural principles of animal handling

Stockpersons should be trained so that they understand the behavioural principles of animal handling (Figure 1).

To keep animals calm and move them easily, the handler should work on the edge of the **flight zone** (Figure 1 – C). He/she penetrates the flight zone to make the animal move and backs up if he/she wants the animal to stop moving. The handler should avoid the blind spot behind the animal's rear (D). If animals turn back and run past the handler while they are being driven down a drive alley in the stockyard, overly deep penetration of the flight zone (C) is a likely cause. The animals turn back in an attempt to get away from the handler. If the animals start to turn back, the handler should back up and increase the distance between him and the animals. Backing up must be done at the first indication of a turn back. If a group of animals balk at a smell or a shadow up ahead, be patient and wait for the leader to cross the shadow. The rest of the animals will follow. If cattle rear up in a crush, back away from them. Do not touch them or hit them. They are rearing in an attempt to increase the distance between themselves and the handler. They will usually settle down if you leave them alone.

The **point of balance** is at the animal's shoulder (Figure 1 – E). Animals will move forward if the handler stands behind the point of balance. They will back up if the handler stands in front of the point of balance. Many handlers make the mistake of standing in front of the point of balance while attempting to make an animal move forward in a chute. Groups of animals in a crush will often move forward without prodding when the handler walks past the point of balance in the opposite direction of each animal in the chute. It is not necessary to prod every animal. If the animals are moving through the crush by themselves, leave them alone. Walking quickly past the point of balance at the animal's shoulder in the opposite direction as desired movement is an easy way to induce an animal to move forward.

The principle is to walk inside the flight zone in the opposite direction of desired movement and to return to the starting position by walking outside the flight zone. The animal has to be able to see you to make this movement pattern work. In chute (race) systems with completely solid sides you may need to make a small slit at animal eye level along the inner radius. In curved systems the handler should work along the inner radius and the outer radius should have a completely solid fence. In systems with catwalks alongside the chute the animals will be able to see you and the chute (race) sides should be completely solid.

Remove distractions – If animals refuse to move up a loading ramp or down an alley or into a milking parlour remove distractions that cause them to balk. Some common distractions are seeing people up ahead, reflections off puddles, vehicles parked near the chute, dogs, or a piece of chain hanging down. Painting the facility one colour to reduce contrast and installing solid fences on ramps and around pens will often improve animal movement. Solid sides improve movement because they prevent animals from seeing distractions outside the fence.



## Older calf

After the horn bud attaches to the skull, the horn grows out from under the skin. It becomes a bony extension of the skull with the hollow centre of the horn opening into the frontal sinus. The brain lies directly under the frontal sinus covered by a thin layer of bone. Dehorning after the horn attaches increases the risk of entering the frontal sinus and subsequent infection.

- Qualifications, experience, skills or training necessary to perform this procedure;
- Operator: Competence in the procedure; animal handling skills.

## Animal handling

Animals need to be handled calmly and with care to prevent distress and injury to the animals and the handlers. A custom-built calf dehorning crate should be used to minimise stress to a calf and for optimum safety to the operator. A person disbudding calves must have the relevant knowledge, experience and skills, or be under the direct supervision of a person who has the relevant knowledge, experience and skills.

### What is the best age to disbud calves at?

Where practical, calves should be disbudded while horn development is still at the horn bud stage, or at the first available handling opportunity beyond this age. This is because the procedure involves less tissue trauma when horn development is still at the horn bud stage, and there is no attachment of horn to the skull of the animal.

### What are the main methods used for disbudding of calves?

- Methods of dehorning (disbudding) at the horn bud stage Include removal of the horn buds with a knife, or thermal cautery of the horn buds;
- A cauterisation method (i.e. using a heated disbudding iron) is used to remove the horn buds;
- The best location to anaesthetise the nerve is halfway between the base of the ear and the corner of the eye. Feel for a bony ridge in this area; the nerve runs under that ridge. Insert a 5/8" needle up to its hub under the ridge and inject 2ml of the local anesthetic. Pull back while still injecting so that the last bit of local is injected just below the skin. Then repeat on the other side.

*\*LA products are prescription only medicines and may be administered or prescribed by veterinary practitioners for animals under their care. The owner/person in charge should have appropriate training in the usage of the anaesthetic and may administer it for disbudding on foot of a prescription of a veterinary practitioner.*



## NOTES

## NOTES

For further information please contact:

The Secretary  
Farm Animal Welfare Advisory Council  
Animal Health and Welfare Division  
Agriculture House  
Kildare Street  
Dublin 2

**Telephone:** 01-607 2049

**Email:** [fawac@agriculture.gov.ie](mailto:fawac@agriculture.gov.ie)  
[www.fawac.ie](http://www.fawac.ie)



Department of  
**Agriculture,  
Fisheries and Food**  
An Roinn  
**Talmhaíochta,  
Iascaigh agus Bia**