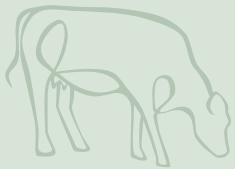


Best practice farms optimise the health and welfare of their heifers through consultation, planning and documenting their prophylactic and responsive health and medical management protocols.



Why is this important?

Healthy animals are more likely to perform well in their growth, reproductive capability and future productive career. Ensuring physical and emotional wellbeing will improve resilience for the heifers, protecting their immune systems and ensuring they are better equipped to cope with the effects of unavoidable illness or injury.



Good practice

- ✓ The composition of diets must be adjusted for growth rate, reproductive stage, body size, environmental temperatures and range of foodstuffs offered (e.g. pasture, hay, silage, concentrates). Consult your veterinarian or a nutrition specialist for advice. Use of regular body condition scoring enables adjustment for over or underweight animals.
- ✓ Heifer BCS should be optimised to reduce the risk of lameness caused by claw injuries. Overweight heifers are vulnerable to strain from the additional weight loading and underweight heifers (without the cushioning of the digital fat pads) have thinner, more vulnerable claws.

See the  **Heifer Nutrition factsheet** for more information.



Best practice

- ★ **Best practice** farms allow heifers to have daily access to pasture, except in extreme weather. The time spent on pasture should be determined by the weather, daylight hours available and ideally individual preference by the heifers, i.e. a choice based system. To ensure a high plane of nutrition for heifers managed at pasture, best practice is to assess grazing residuals daily. Heifers should be moved to a fresh allocation of pasture based on meeting target post-grazing heights.

See the  **Heifer Nutrition factsheet** for more information.





Good practice

- ✓ Quarantine should be enforced for all purchased animals, according to the instructions (duration and care) given by your veterinary advisor. It is advised to purchase animals only from farms of equal or better health status.
- ✓ Isolated animals should be easily segregated from the herd, whether on an individual or group basis, to ensure appropriate biosecurity measures (clean to dirty traffic, minimal exposure of staff or other animals, etc).
- ✓ Biosecurity procedures should be employed and documented to prevent disease spread. The farm should be secured with fences or other systems to avoid contact with other species of animals, or neighbouring herds of the same species, the entry of visitors to the farm should be regulated, appropriate cleaning and disinfection should be employed (e.g. with chlorine bleach, quaternary ammoniums, iodophors) and rodents and insects should be controlled. Pesticides and authorised disinfectants should be used according to the prescribed directions.
- ✓ Floors should be kept as clean as possible and adapted to prevent slipping during mounting behaviour or whilst lame. Injuries caused by slips or falls can affect reproductive performance as well as reducing welfare.
- ✓ Dirty animals are at higher risk of skin, localised and systemic infections (e.g. mastitis or lameness). Use cleanliness scoring to assess the heifer group and take remedial action where necessary (e.g. washing animals and/or use of brushes, additional bedding to reduce soiling and monitoring of individual heifers who may not be self-grooming due to ill-health).



Best practice

- ★ **Best practice** farms provide their heifers with daily access to well-managed pasture (i.e. well-drained, provision of shelter and/or shade) from weaning until at least 3 weeks before calving except in extreme weather. This offers the opportunity to walk/ run/ play freely on varying surfaces, providing exercise, improved muscle and foot condition and enhanced immunity to strongyle parasites, as well as mental wellbeing. When permanently accommodated outdoors, sufficient shelter and comfortable lying areas should be provided.
- ★ **Best practice** farms have strategies for ongoing ground surface maintenance, both indoors and outside, to minimise the risk of injuries resulting in lameness.
- ★ **Best practice** farms use foot baths for the prevention of lameness as well as a treatment option for limiting the spread of infectious foot lesions. Routine hoof trimming should be carried out at least once before calving (not during peak pregnancy).
- ★ **Best practice** farms monitor the time each individual heifer spends lying down and resting, to ensure they are comfortable and have time to rest their feet and legs to avoid developing lameness.

See the  **Heifer Environment factsheet** for more information



 Good practice

- ✓ Hygiene and cleanliness must be kept to a high standard to help prevent infection and/or disease transmission.
- ✓ Advice should be taken from your veterinary advisors to ensure appropriate disease prevention and control measures are in operation. Boot washing facilities and disinfection points (footbaths) should be provided at the entry point to the farm unit as well as the entry point to areas where livestock are kept.
- ✓ Assessment of management-related disease hazards should be undertaken regularly. A farm-specific plan should be developed, with support from a veterinarian regarding treatment and prevention, based on disease patterns and risks present on-farm (including metabolic disease). Such a plan might include use of vaccinations, parasiticial treatments and dietary adjustments etc.
- ✓ The herd should be inspected regularly. This will require farmers to allocate time every day for inspections, as well as that required to take any remedial action necessary.
- ✓ Heifers should be given both opportunity and encouragement to exercise (walking and moving freely) for adequate bone and muscle development. Access to well managed pasture can help to reduce problems with claws, feet and legs.
- ✓ Heifers should be observed for signs of lameness daily and lame heifers, whether mild, moderate or severely lame, should be treated immediately and for the duration of the lameness.
- ✓ Farmers should be able to recognise signs of lameness and conduct gait scoring using a standardised method such as provided in **Table 1**

Signs	PAIN LEVELS				
	No pain	Mild	Moderate	Severe	Very severe
General signs	<ul style="list-style-type: none"> • Content and quiet • Grazing or eating at feeder • Curious about surroundings • Moves away when approached • Normal interaction with herd and calf (if a cow) 	<ul style="list-style-type: none"> • Mild posture change • Stiff or subtle lameness • Less interested in surroundings • May warn off herd mates by head shaking or bunting 	<ul style="list-style-type: none"> • Away from herd • Quiet, dull eyes • Abnormal posture-stiff, not moving, arched back, lame • Rough hair coat • Decreased appetite • Calf at foot may be hungry or bawling 	<ul style="list-style-type: none"> • Away from herd • Stiff, unwilling to move • Not eating • Unkempt appearance • Weight loss • Abnormal posture-head down, tucked tail, arched back, ears down 	<ul style="list-style-type: none"> • Rapid shallow respirations • Open mouth breathing • bulging eyes • Depressed • Grunting • Teeth grinding • Not eating • Rigid posture or down
Reaction to palpation of affected site	Animal not bothered by palpation anywhere	Animal may or may not react to palpation of an affected site (wound, swelling, injury, surgical site etc): pull away, kick, vocalize	Animal reacts to palpation may try to run away or act aggressive when handled	Animal moves away from palpation may kick or bellow or be rigid	Animal is rigid or unresponsive

Table 1. Animal signs associated with pain levels
(adapted from IVAPM and Care4Dairy resources on assessment of pain in cattle, De Boyer & Ledoux 2023)

- ✓ Feet should be checked (legs and feet lifted for inspection) and hooves trimmed or treated, if necessary by a professional hoof trimmer, properly trained farmer or veterinarian, to prevent overgrowth. Heifers who have experienced lameness should be checked more frequently. The ICAR claw health atlas can be used to identify claw disorders.



- ✓ Severely lame heifers should be accommodated where they can be kept comfortable, protected from trampling by other animals, observed and treated easily (e.g. medications or remedial management) and with feed and water in close proximity. They should be within sight of the other heifers, to reduce stress from social isolation.
- ✓ Treatment for lameness should target the area of concern (bone, joint, skin, soft tissue or claw) and depending on the severity, input from a veterinarian or professional hoof trimmer enlisted.
- ✓ Pain management (including non-steroidal anti-inflammatory medications) should always be considered for lame heifers, to minimise the detrimental effects on the heifer's welfare. This will also reduce the impact on restricted movement, reductions in food or water intake and immune suppression caused by the stress associated with pain.
- ✓ Foot baths should be used when infectious disease affecting the feet of heifers has been identified, in order to help limit spread.
- ✓ When buying a heifer the feet and claws should be checked for early signs of pathology (appearance of swelling, overgrown claws, bleeding points/ bruising/ lesions or any signs of infection) and if acquiring a new animal on farm, consider whether a period of isolation may be beneficial where there may be risk of disease transmission.
- ✓ During the 'transition period' (3 weeks before and after calving) heifers should be monitored closely as they are at higher risk of illness due to hormonal fluctuation, immune suppression and inevitable stress associated with their first parturition.
- ✓ The transition period also increases the risk of mastitis in heifers so attention should be given to both prevention and prompt treatment of mastitis.
- ✓ Heifers should be observed for signs of mastitis as part of routine observation. If injury or trauma to the udder has occurred, remedial action should be taken immediately to help prevent deterioration.
- ✓ Ensure flies are controlled. Flies carry bacteria which can infect the udder and increase the risk of mastitis.
- ✓ Management of heifers can involve changes to group composition, environment, diet and use of interventions (vaccinations, examinations etc.). These changes can challenge the immune system of young animals making them more susceptible to disease. To minimise the effects of this, positive behaviours should be encouraged (play, exploration and positive social interactions), group composition should be kept stable, the environment should be comfortable, safe and clean and diets tailor made, balanced and only gradually adapted to allow time for rumen stabilisation.
- ✓ Individual health should be monitored daily by those handling the heifers. Farm personnel should have appropriate training and experience in both normal and problematic behaviours so that signs of stress, injury or disease are identified and rectified immediately. It is important that time for both observation and recording of findings is allocated and prioritised in the daily farm schedule.
- ✓ Heifers should have prompt access to medical care by suitably qualified professionals (e.g. veterinarians) for illness or injury. Early intervention helps to reduce the welfare and financial cost of treatment whilst minimising loss of performance (fertility or yield).
- ✓ Farmers should provide effective first aid treatment for sores, wounds, injuries and swellings and, where relevant, seek veterinary advice or assistance.
- ✓ Appropriate type, dosage and duration of pain relief should be provided by a veterinarian for any inflammatory conditions (acute or chronic).
- ✓ Bacteriology testing enabling culture, identification and antibiotic sensitivity testing of any identified pathogens will enable targeted treatment and prevention programs to be developed on farm.



Best practice

- ★ **Best practice** farms have a written health and welfare plan devised with input from veterinarians and allied professionals. This will include prophylactic health management and a plan for triaging illness/injury cases to optimise performance and reduce risk. This should be reviewed and updated each year based on data collected on farm.
- ★ **Best practice** farms monitor heifer weight and BCS monthly as a minimum (as opposed to relying on one or two key decision making timepoints) to enable tracking of each individual heifer's progress and support nutrition planning for future seasons.
- ★ **Best practice** farms procure veterinary oversight for infectious disease management. This ensures regular testing/prophylaxis is in place for the main infectious diseases: mastitis (Staphylococcus, Streptococcus, E. coli), salmonellosis, paratuberculosis, tuberculosis (in relevant geographical areas), brucellosis (in relevant geographical areas), infectious bovine rhinotracheitis, bovine viral diarrhoea, digital dermatitis.
- ★ **Best practice** farms ensure farm personnel are trained in and familiar with use of pain scoring in heifers to inform use of pain-relieving medications and/ or the need to seek veterinary intervention.
- ★ **Best practice** farms record performance data (relating to growth, Feed Conversion Ratio (FCR), fertility etc) as well as morbidity (e.g. scour, mastitis, lameness) and mortality (planned and accidental) so that management practices and planning can be adapted accordingly.
- ★ **Best practice** farms objectively assess calving seasons. For example, recording: number of heifers requiring assisted calving, incidence of post- calving complications (e.g. retained placenta or uterine infections), incidence of last trimester abortions.
- ★ **Best practice** farms ensure that a contingency plan is available to the farmer in case of outbreak of contagious diseases close to the farm. This may be tailored to the individual farm, in consultation with veterinary advisors, or drafted for a group of farms in close proximity with similar measures in place.
- ★ **Best practice** farms make every effort to ensure individual heifers have adequate time resting in clean and dry conditions, that stressful interactions with people or other animals are avoided and that if signs of ill health or changes in demeanour are detected, interventions are both timely and effective. Stress increases the risk of disease being exacerbated (e.g. sub-clinical mastitis becoming more severe).

See the [E6 Cow Metabolic and Nutritional Disease, Cow Reproduction, Cow Infectious Disease, Cow Locomotion, Cow Udder Management and Calving Care-Cow factsheets](#) for more information



Good practice

- ✓ Changes in behaviour can indicate a response to stress, illness or injury. Training farm personnel to observe and interpret these changes in behaviour is important to ensure rapid identification and response to problems.
- ✓ Observation of the heifers to ensure they can lie down and stand up comfortably, without risking injury (head, neck, body or limbs) or contamination or damage to their udder, is vital. If difficulties are identified remedial action should be taken immediately.

See the [E6 Heifer Behaviour and Human-Animal Interactions factsheet](#) for more information



Best practice

- ★ **Best practice** farms have management protocols, developed with assistance from relevant farming and veterinary advisors. These protocols include: preventative healthcare, nutrition, dry-off management, design of the calving area, supervision of calving, policies on intervention during calving. These are continuously assessed for effectiveness and adapted accordingly.
- ★ **Best practice** farms actively evaluate how precision livestock farming for behaviour monitoring (e.g. sensors, bolus, image or sound based) can help gather data on individual and herd health (e.g. health, reproductive data, food intake, rumination time etc.). This data could be useful to guide environmental changes that improve the conditions for the heifers all year around, reducing stress and improving health, but should be considered an adjunct as opposed to an alternative to well-trained farm personnel.

See the [E6 Heifer Behaviour and Human-Animal Interactions factsheet](#) for more information



Summary



Farm

Healthy heifers are more likely to perform well for the farm, improving their cost effectiveness and reducing the cost of losses from illness and injury.



Heifers

Ensuring their environment is safe and the risks from infectious, parasitic and nutritional disease are mitigated as much as is possible, will protect heifer health and welfare.



Handler

Training, planning and support from farming and veterinary advisors will improve the confidence of those caring for the heifers and support their own health, job satisfaction and resilience at work.

Take pride in all of your farm's good and best practices towards animal welfare!

Additional resources



Care4Dairy.eu