

Best practice farms optimise the performance of their cows by providing tailored nutrition, in a clean, safe and enriched environment which supports optimal health, welfare and human- animal interactions.



Why is this important?

Ensuring cows receive optimal nutrition to support both health and reproductive performance is a vital investment to optimise performance and minimise costs.



Good practice

Watering

- ✓ Clean water must be freely available at all times.
- ✓ Cows must have access to an adequate volume of clean, palatable water enabling them to maintain healthy hydration, irrespective of their diet and the temperature of their environment. Cows need approximately 40 L of drinking water per day at dry-off and 120 L per day during lactation, depending on their individual size, environmental temperature, the moisture content of the feed and their stage of lactation.
- ✓ Drinking water must meet the same potability criteria as for humans (constituent minerals and potential for pathogens). If the drinking water is not running water (e.g. rain, borehole, pond) it should be tested annually as a minimum, as well as whenever problems are observed. Attention should also be paid to open wells contaminated by surface water, where infectious agents often accumulate after periods of rain.
- ✓ Water troughs and drinkers should be easily accessible for both the cows (if possible from two sides) and humans (for maintenance), positioned in high traffic areas but on a stable, drained area (not close to gateways). They should be cleaned at least once a week and immediately if identified as dirty or contaminated. Stagnation of water should be avoided.
- ✓ Where water intake appears to have reduced (e.g. drop in production or feed intake, dry dung, animals hesitating or jostling at drinkers, bawling and sucking noises) check the drinker for problems (e.g. lack of flow, contamination or leakage).

Feeding

- ✓ Cows must have daily access to a palatable ration that meets their nutritional needs (energy, proteins, vitamins and minerals), promotes satiety and maintains skeletal growth, body condition, health, and vigour. Advice may be sought from a veterinary advisor or cow nutritionist.
- ✓ The composition of diets must be adjusted for production level, 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 of diets for over or underweight animals.
- ✓ Feed should be visibly clean, not contain obvious mould and be free of contamination from faeces, rubbish, sticks, tree leaves or toxic plants. For less visible sources of contamination, testing should be regularly completed to ensure there is no evidence of waste, poisonous plants or any other potential source of microbes, parasites or toxins.
- ✓ Cows should have the opportunity to graze outdoors, where weather conditions permit, however, cows out on pasture may require supplementation of roughage, concentrates or minerals, depending on the season and the cows' stage of production cycle, and the nutritional value of the grass.
- ✓ The nutrient content of feeds should be checked (e.g. with nutrition tables and/or analysis) to ensure that diets are balanced and free of spoilage.



- ✓ Provide roughage to increase chewing time and rumination- more than 50% fibre in the ration helps to reduce the risk of acidosis.
- ✓ Feed should be uniformly delivered along the length of the feeding station and available all day. The feeding schedule should be kept consistent and allow adequate time to attend to each area where animals are kept. Avoid feeding large amounts of concentrates at one time.
- ✓ In hot weather, feed should be distributed early in the morning and late in the evening (cooler times of the day) and the fibre content reduced because digestion of cellulose requires energy and produces extra metabolic heat.
- ✓ Both the macro (phosphorus, calcium, Vitamin E) and trace element (copper, zinc, sulphur, selenium) composition of the diet should be calculated and adjusted accordingly.
- ✓ Average feed intake should be closely monitored at group level to ensure the cows receive adequate nutrition.
- ✓ Where salt blocks are provided, they should be located at a distance from water sources.
- ✓ Feed should be stored in a suitable environment to protect its quality and prevent contamination with toxic or harmful substances (especially segregate storage of pesticides, chemicals, oils and fuels to avoid any risk of feed contamination). Birds, wild or domestic animals should be prevented from accessing stored feeds. The “best before” date indicated on label should be respected.
- ✓ Careful management of body condition in early pregnancy will help avoid the need for nutritional restrictions during the last trimester, which increase the risk of complications such as compromised placenta and foetal weights and uterine inertia (deficient relaxation of the pelvic musculature/ ligaments which aids natural calving).



Best practice

Watering

- ★ **Best practice** farms will have at least 2 water sources in the area available to the cows.
- ★ **Best practice** farms conduct regular, at least annual, tests on water for potability. This will include water from all sources, including wells, storage tanks or the public water supply which may provide their own data.

Feeding

- ★ **Best practice** farms keep accurate records of individual cow weights and body condition score to allow meaningful adjustments to be made promptly (see **Figure 1** below). This data will also be fundamental in refining future decisions at the herd level.
- ★ **Best practice** farms regularly test both concentrate and roughage provided on the farm (at least yearly) to safeguard nutritive value and quality. This would include each harvesting of silage.
- ★ **Best practice** farms harvest forage at the right stage and test its quality throughout the growing season to ensure optimal nutrition.
- ★ **Best practice** farms manage the environment to reduce the risk of cows ingesting foreign bodies. Where the latter occurs, endo- ruminal magnets may be used or magnets added to the mixing tank.
- ★ **Best practice** farms monitor environmental temperature and humidity of feed stores using an automatic system with probes to ensure they are kept at the optimum value, as indicated on the food label.



Good practice

- ✓ Drinkers should be easily accessible for both cows and humans (for maintenance), positioned in high traffic areas and on a stable, drained area (not close to gateways).
- ✓ There must be at least one drinker (i.e. an individual drinker or collective water trough) for every 10 cows and a minimum of two separate drinkers in each penned area to prevent resource guarding. Provide 90cm of drinker space for every 10 cows.
- ✓ When cows are on pasture and the distance between the water trough and the grazing area is less than 200m, 10% of the herd must be able to drink at the same time. Greater than 200m, a longer trough will be required, enabling 20% of the cows to drink simultaneously.
- ✓ Drinkers should be positioned at a height 60-75 cm above the ground, with a 5-10 cm lip. The water depth should be a minimum of 10 cm. The flow must be at least 12 L/min at an individual drinker and 20 L/min at a collective water trough.
- ✓ Keep at least 50 cm between water circuits and electric circuits. At pasture, avoid installing water troughs close to electric fences.
- ✓ Ensure feeding surfaces are smooth and elevated by 10-15 cm, i.e. higher than the standing area. Check the prevalence of neck injuries and ensure comfortable positioning is feasible for the group.
- ✓ Group housed cows should have sufficient space for all animals to consume their food simultaneously. If this is not feasible the space can be divided using headlocks or bars to reduce conflict and resource guarding, and fresh food added frequently. Feed bunk space should be at least 75 cm in length per lactating cow and transition cows. This will help to ensure adequate food intake for all of the animals, reduce stress, conflict and potential injuries around feeding areas.

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



Best practice

- ★ **Best practice** farms provide group housed cows with at least 90cm of linear feed bunk space per cow.

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



Good practice

✓ Cow body condition score (BCS) or weight should be monitored routinely or at key stages (e.g. after weaning, before breeding) and feeding strategies refined to achieve ideal targets thereby reducing metabolic disease and dystocia risks. Cows should be weighted always at the same time of the day. If it is not possible to weigh all cows, a representative sample of cows should be weighed at these selected times (see **Figure 1**). Where suitable weighing scales are not available, weight can be estimated by measuring the thoracic circumference using a specific conversion measuring tape.

See the **factsheets** on **Cow Metabolic and Nutritional disease, Cow Reproductive, Cow Infectious Disease, Cow Locomotion and Cow Udder Management** for more information

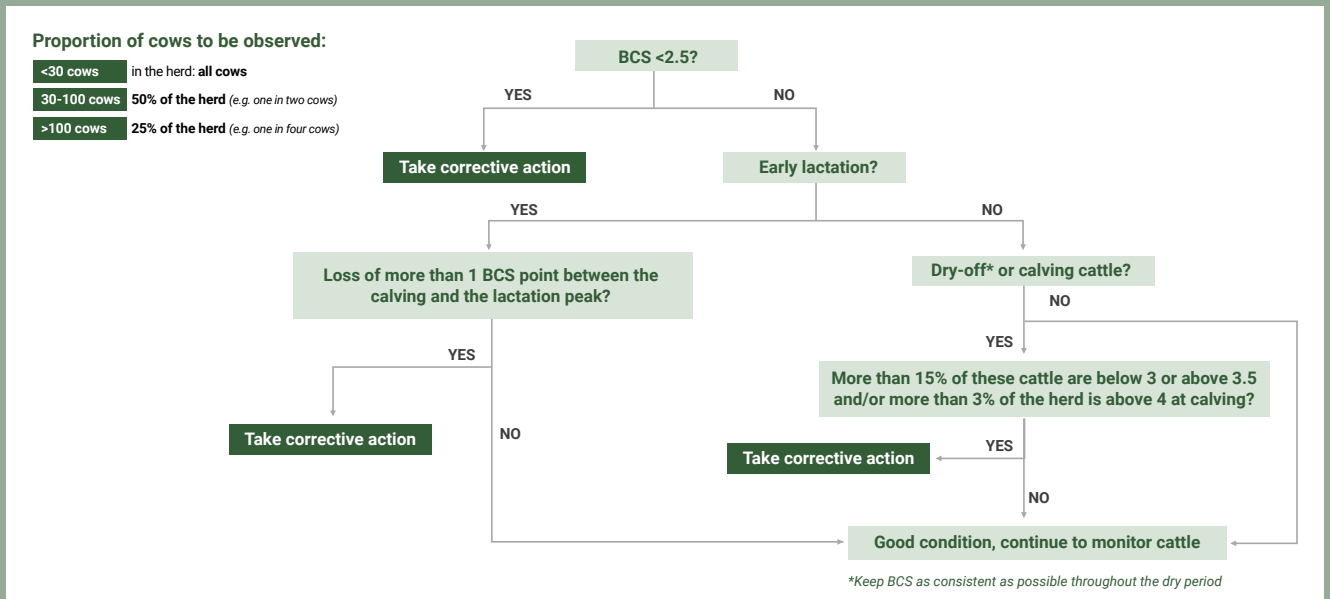


Figure 1. Decision tree regarding Body Condition Score (BCS) of dairy cows.

Best practice

See the **factsheets** on **Cow Metabolic and Nutritional disease, Cow Reproductive, Cow Infectious Disease, Cow Locomotion and Cow Udder Management** for more information

Good practice

✓ Cows should have access to diets that fulfil their nutritional requirements with sufficient forage to encourage rumination, and also satisfy their behavioural needs.

See the **Cow Behaviour and Human-Animal interactions factsheet** for more information

Best practice

★ **Best practice** farms provide a choice of foodstuffs that are enjoyable to eat such as mixed herbage pastures or a variety of types and sizes of foods suitable for the stage of lactation of the cow.

See the **Cow Behaviour and Human-Animal interactions factsheet** for more information

Summary

Investing in the correct nutrition for cows will help to ensure the productive success of the farm. Cows require tailored nutrition to support their ongoing health and performance, with additional needs associated with pregnancy and lactation.



Farm

Farms that closely monitor the physical condition of their cows and adapt their management protocols accordingly will benefit from improved performance and profitability.



Cows

Cows provided with a safe environment and optimal nutrition are more likely to benefit from optimal health and resilience to both stress and risk of disease.



Handler

Clear farm management protocols, with provision of training and appropriate equipment and handling facilities, will help ensure farm personnel remain safe and happy in their role.

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

Additional resources



Care4Dairy.eu