



Management of Nutrition around Calving in the Suckler Herd

Summary

- Nutrition and body condition of the suckler cow has a very important role to play in ensuring the cow successfully delivers and rears a calf every year.
- Nutrition around calving impacts on calving ease, calf survival and cow fertility.
- Manage nutrition by grouping cows according to body condition score and formulate rations to meet their energy, protein and mineral requirements for the stage that they are at.
- Forage analysis is important so that rations can be tailored to meet the nutritional requirements of the cow during pregnancy and lactation.

Introduction

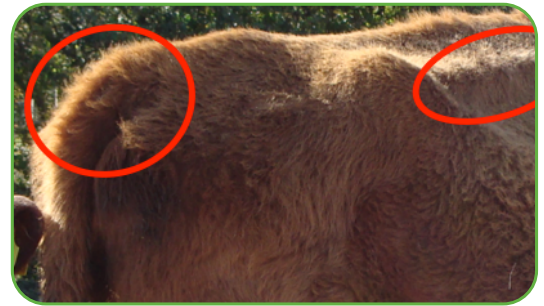
The goal in any suckler system is for the cow to produce a calf every year, with a calving interval as close to 365 days as possible. There are many factors involved in achieving this goal, however nutrition plays an important part and can often be over-looked. A few simple rules of thumb and steps to follow can help improve nutritional management of the cow and maximise her health and productivity.



Contributing factors

Body Condition Score (BCS)

Monitor BCS throughout the year, with key times being at housing/end of the summer, last two months of pregnancy and after calving prior to bulling. At housing, group cows by their BCS and feed appropriately to either lose weight, maintain weight or gain weight. If cows are to be outwintered, keep leaner cows separate or house them for preferential treatment. First calvers, second calvers, lean cows and those carrying twins, should be kept separate from fat cows and fed accordingly. It is critical that cows calve in good body condition (around BCS 2.5–3) to aid calving ease and produce sufficient good quality colostrum and milk. This will also help optimise fertility in the subsequent breeding season, maintain a tight calving pattern and avoid extended calving intervals of individual cows.



Assess body condition of cows regularly at these key areas (tailhead and spinal processes).

Calving spread has an impact on feeding, so aim for as compact a calving as possible to enable cows to be managed effectively. Spread out calvings make it difficult to manage cow nutrition.

Aim to avoid big swings in BCS and use extra condition on cows gained from the summer months to lower expensive feed costs in the winter months. Always aim to take weight off cows gradually and in plenty of time prior to calving, with the aim of maintaining condition for the last six weeks of gestation. No more than 0.5kg/day loss (or gain) is appropriate.

Condition scoring by eye will give a rough guide, however a much more accurate assessment uses a “hands on” approach. Try to score cows when they are being handled for other management reasons. Recording each score and comparing it to the last will help build a picture of herd health and how well they are coping with their feeding regime.

One BCS unit equates to around 13% of liveweight so for a 700kg cow this is around 90kg. Every 1kg of liveweight loss supplies the cow with about 35MJ of metabolisable energy. The energy required to gain 1kg of liveweight in the pregnant cow is similar.

For example, a spring-calving cow going into the winter with five months until calving in BCS 3.5 can use around 0.5kg/day of her reserves over three months to reduce her condition to BCS 3. This saves on winter feed costs provided the base ration meets the cow's intake needs, protein and mineral requirements. Take advice from a trusted nutritionist when making these decisions. Planning is essential and is a worthwhile exercise, given that feed is the greatest cost in keeping a suckler cow.

- **Managing BCS for calving – prepare early.**
- **Body condition tends to vary throughout the year with feed supply.**

A thin cow (less than BCS 2) will need to gain 0.5 kg/day over three months and needs access to either good quality (10.5 MJ ME/kg DM) grass silage ad lib or poor silage supplemented with 1–2 kg of high-energy concentrate.

During the last month of pregnancy, the calf's nutrient demand increases, and the cow also needs to make colostrum in the last two weeks of pregnancy. It is difficult to ration cows on their calving date as the whole calving period could be 9–12 weeks long. It is a balancing act and advice should be sought based on the forage that the farm has available and the calving period expected.



With outwintered cows BCS loss should be monitored carefully. Outwintering can increase the cow's energy requirements by up to 15%, depending on weather conditions. Wet and windy weather combined takes the biggest toll on condition and calculations for quantity of feed provided should take this into account, as well as cow condition.

If cows are lean at the end of the summer period or winter housing period, consider what has happened to cause this for future years and take action to improve cow condition. Consider the feed that they are on and whether it meets their energy and protein requirements for their stage in the production cycle. To manage condition, the quality and quantity of the base ration (forage) needs to be known so forage must be analysed.

Example: Cows need to eat 1.5–2% of their liveweight in dry matter intake to be satisfied, so a 700kg cow will eat a minimum of 10.5kg of dry matter. If a silage is 25% dry matter this equates to 42kg of fresh material. If this silage is 9MJ/kg DM then this would supply 94.5MJ of energy and if it is 11MJ/kg DM it would supply 115.5MJ of energy. Knowing what you are feeding and how much is important not to over or undersupply energy.

Where accurate calving dates are known, energy intake can be increased 4–6 weeks pre-calving to help reduce BCS loss and promote good quality colostrum production. This can be done by including more silage in the ration or supplementing with concentrates to provide more energy and protein if the base ration forage is poor. Ensure the ration contains sufficient rumen degradable protein so that the forages can be digested and utilised well. Limiting feed supply to the cow to try and reduce calf weight during the last month of pregnancy can reduce cow fertility, colostrum quality and the cow's energy at calving. Metabolic blood profile testing of cows 1 month prior to the start of calving gives an indication of whether their ration is meeting their needs in terms of energy, protein, major minerals and trace elements. While on paper rations can appear to meet requirements, other environmental factors can influence nutritional status such as access to feed and social grouping.

Forage and Feed Management

If forage quality is good (above 10ME and 11% crude protein), feeding dry suckler cows ad-lib silage can result in them becoming overfat for calving. Incorporating some straw or lower quality forage into the diet can maintain rumen fill while avoiding cows gaining condition. Restricting dry matter intake of dry suckler cows is only possible if there is sufficient feed space for all cows to access the feed at the same time. If rations are based on straw it must be remembered that straw is low in energy, protein and minerals so correct supplementation of straw is vital. Protein is required for the rumen microbes to break down forages effectively in the rumen so that the cow gets the protein and energy she requires from the ration.



The whole ration needs to be at least 9% crude protein in the dry matter for rumen microbes to function effectively. Lower protein diets result in less rumen microbes and poorer digestion and utilisation of the feed, leading to deficiencies in protein and energy to the cow and serious health issues such as rumen impaction. Quantity of feed fed will also determine overall protein available to the cow (metabolisable protein). In an SAC Consulting study, over half of cows that were blood tested pre-calving were short of rumen degradable protein. On straw based rations nearer calving, cows will require additional energy and protein. Alternatively, introduce silage to the ration around 4–6 weeks before calving to ensure nutritional requirements are met as demand increases due to the growing calf and for colostrum production.

Mineral Supplementation

Vitamin and mineral supplementation are important all year round and the level of supplementation will depend on the ration being fed. Grass for example is mainly short in trace elements and magnesium deficiency can be an issue at turnout and in the autumn time. Straw-based rations require higher levels of supplementation and if cows are outwintered on forage crops such as brassicas, the trace elements iodine, copper and selenium need additional supplementing. Where cows are fed grass silage, 100–120g/head/day of a good suckler cow mineral will normally meet requirements.

Pre-calving Mineral Supplementation

A month pre-calving the mineral supplement should contain at least 10% magnesium and 2000iu/kg of vitamin E. Studies by both the University of Edinburgh and SAC Consulting have shown that around one third of pre-calving cows are short of magnesium as indicated by blood sampling.

This can have consequences for ease of calving since magnesium is involved in the activation of homeostatic mechanisms that release calcium from body stores for muscle contraction. Recommended intakes are 20–30g of magnesium in the overall ration (with the upper level being the target for lactating cows). However, if potassium levels in grass/forage are high (2–3%), then 30–40g of magnesium should be the target intake from the total diet.

As a guide, a cow eating 10kg of dry matter of grass would get around 16g of magnesium from the grass. If straw made up half the ration, then only 11g of magnesium would be supplied from the ration.



Table 1: Magnesium percentage in mineral supplement and supply to the cow at different feed rates.

% magnesium in mineral	Supply of magnesium fed at 100g/head	Supply of magnesium fed at 150g/head
10%	10g	15g
15%	15g	22.5g
25%	25g	37.5g

Consider all the sources of minerals and trace elements being supplied (powdered minerals, buckets and boluses). Over supply could have as detrimental an effect as under supply.

Example: A cow in gestation requires 0.5mg of iodine for every kg of dry matter she eats. Her overall requirement is around 5mg/day. A mineral with 250mg/kg of iodine, fed at 100g a day provides 25mg of iodine, well over requirements without a bolus. Blood sampling can be done to test for iodine status.

Management of Cows Post-calving

Once cows have calved their energy requirements increase by around 30% from late gestation and need to be fed to produce milk and reduce the risk of metabolic disorders associated with reduced energy and mineral intake. Heifers, first calvers, lean cows and those with twins will need particular attention. The forage they go onto will need to be fed to appetite and supplemented according to its quality. Cows will eat less of a poorer quality silage as it takes longer to digest it and hence need more concentrate supplementation. The protein concentration of the supplement will depend on the forage fed, aim for at least 11% crude protein in the overall ration.

Table 2: Lactating cow example on different quality forage.

	Poor (9.5MJ/kg DM)	Average (10.5MJ/kg DM)	Good (11.5MJ/kg DM)
Silage	Ad lib	Ad lib	Ad lib
Concentrates	3kg	1.5kg	-
Minerals	100–150g	100–150g	100–150g

It goes without saying that all livestock must always have good access to clean fresh water, particularly for lactating cows which will have a higher demand for milk production.

Calving at Grass and Cows and Calves at Grass

If cows are calving at grass or turned out to grass after calving, ensure that sward heights are sufficient to meet energy requirements. If there is insufficient grass, supplement cows with additional forage and/or concentrates. They are most vulnerable to metabolic issues such as grass staggers (magnesium deficiency) and lack of energy (ketosis) on poor grazing while in the early stages of lactation.

Table 3: Grass sward heights to maintain cows and young calves.

Stock	Time of year	Set stocking	Rotational grazing entering grass height	Rotational grazing exiting grass height
Spring calving suckler cows and calves	May	5–6cm	10–12cm	5–6cm
	June – July	7–9cm	12–13cm	7–8cm
	August – October	7–9cm	12–13cm	8–9cm

- Allowances are a guide and a close eye should be kept on condition of cattle, how the calves are performing and of course the weather when cattle are at grass.
- Age and condition of the sward need to be taken into account. A lactating cow could require 50–60kg/day of grazed grass for her own maintenance and 6–8kg of milk. If grass is short be sure to supplement with hard feed or forage especially prior to and while the bulls are in.
- Dry cows need less energy and intake from grass and will get fat given the chance. Set-stock grazing grass of 4cm in height will suffice, note that how this is achieved will vary depending on grass growth and stocking densities. They could also be sweeper uppers in a rotational grazing system.
- Remember grass is short of trace elements and cows that are lactating are also likely to receive insufficient major minerals (calcium and magnesium) from grass alone, so be sure to supplement them appropriately. A bolus alone will only supply trace elements.

For fertility it is important to avoid excessive BCS loss and lean cows (below BCS 2.5) at any stage of the cycle, especially pre- and post-calving. Any cows calving at less than BCS 2.5 should be fed to maintain their condition and improve their energy status for bulling. Evidence in dairy cows shows that if cows lose more than 0.5 units of BCS in early lactation fertility is more severely affected.

Conclusions

- Management of body condition of the pregnant cow and after calving, prior to bulling, has a big impact on calf survival and fertility. Condition should be altered gradually over time to avoid big swings in condition change i.e. plan to minimise condition loss in early lactation as much as possible.
- Ensure the forage quality is known and the quantity fed is based on this information to get cows in the right body condition score for calving.
- Minerals, trace elements and vitamins are important, however energy and protein requirements must be met first.
- It may seem complicated but taking advice from a nutritionist will help plan and improve overall herd health and output.

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