The importance of condition scoring

Body condition score has a major impact on the productivity and profitability of dairy herds. Discussion group facilitator and consultant Mary Kinston BSc Agriculture PhD provides a guide to achieving key targets.

Dairy cows that calve in the right body condition, that lose no more than 0.5 of a body condition score (BCS) after calving, and are gaining weight, will maximise dry matter intake, milk production, reproduction function, cow health and welfare. Therefore, BCS has a huge bearing on a dairy herd’s ability to be productive and profitable. Research has also indicated that the condition of a cow in early lactation will also influence the sex of future calves and the productive and reproductive capacity of heifers yet to be born. Yet while the importance of having cows hitting BCS targets has been well known for decades, its assessment and, subsequently, its management, is one of the most under-utilised techniques applied on the dairy farm.

Irrespective of the farming system or cow genetics, milk production is optimised when a mature cow calves at a BCS between 3 and 4. For example, a study by McNamara et al in 2001 showed that cows that calved below a BCS of 2.75 produced, on average, four litres per day less during the first eight weeks of lactation, compared to cows that calved at a BCS of 3. Other studies have also shown negative effects on the anoestrus period, being 8-10 days longer, and the pregnancy rate to first service being 7% less. Another consequence of these negative effects on reproductive performance is the reduction in milk production in the following year due to a prolonged calving interval. The milk-production double-whammy!

However, production benefits do decline with increasing body condition and increase the risk of metabolic health disorders at calving when the BCS increases beyond 3.25 in a mature cow, and 3.5 in first and second calvers. So, for a production system to run smoothly, BCS does need to be managed, rather than become a result of either good or bad silage, high or low milk price, and the old constraints that milk quota posed.

HOW TO CONDITION SCORE COWS

Being able to condition score cows is a valuable tool and is not a hard skill to learn. Essentially, condition scoring is an assessment of the relative amounts of subcutaneous body fat or energy reserves in the cow. The cow is appraised through a combination of handling and visual assessment, and ranked relative to a condition scoring system. The main scoring system in use in Ireland runs from a score of 1 (extremely thin/emaciated) to 5 (very fat) but, in general, scores of <2 and >4 are rarely found on commercial dairy farms. As a BCS is a subjective measure, all dependent on personal opinion, it is important to regularly calibrate your eye. To calibrate your eye, you need to line up 12-15 cows of varying condition in a collecting yard or crush. Handle the animals to determine the amount of flesh covering the key body points, being the backbone, ribs, short ribs, hip bone, thurl (between hip bone and pin bone), pin bone and tail head. Table 1 outlines the key differences you are looking for.

The aim is to differentiate cows with condition scores between 0.25 of a score, as listed in Table 1. A quarter-score system is used as it is simpler and more reliable than spending five minutes debating whether the animal in question is a 2.9 or a 2.8. For example, determine whether the animal is closer to a condition score of either 3 or
and these 13% will require proactive management such as milking once a day prior to and during mating to aid breeding. If farmers repeat this exercise every other month from calving, it allows farmers to identify and manage thin cows and will ultimately improve the average BCS by decreasing the percentage of animals falling into these low scoring categories.

As the application of condition scoring and its management on farm has been universally hit and miss, industry bodies in New Zealand have implemented an accreditation scheme. This has offered farmers the opportunity to avail of a certified assessor (often the local vet) who assesses the herd’s BCS at regular intervals. Farmers have found this to be very beneficial and feel it reduces the risk of subjective interpretations when scoring the herd, with a clear benefit in someone else who knows the herd but doesn’t see them every day.

**SEASONAL TARGETS**

**AUTUMN**

As previously outlined, the aim of BCS management is for cows to achieve target scores at key stages of lactation. BCS management starts in the autumn. However, this obviously can conflict with the aim of a farmer to produce autumn milk and an income. Where a cow’s BCS is low, this cow needs to be identified and dried off with adequate time to gain condition prior to calving, rather than succumbing to the temptation to milk on and forego BCS to chase milk litres in the tank. While the efficiency of weight gain is better during lactation, the inability to dose a cow during lactation and the reduction in diet quality, be it silage, meal feeding or grazing, often sees BCS at best holding or declining as cows continue to milk from late November into December. The only strategy that appears to yield significant weight gain during lactation is once-a-day milking, and this needs to be implemented early enough in mid-to-late lactation to avoid issues associated

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**Table 1: Key differences.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Very lean</th>
<th>Lean</th>
<th>Lean but fit</th>
<th>Fit</th>
<th>Firm not very fat</th>
<th>Fat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ribs</td>
<td>Obvious and feel hard</td>
<td>Obvious, little suppleness</td>
<td>Feel flatter and smoother</td>
<td>Smoothness</td>
<td>Flat</td>
<td>Flat and not easily felt</td>
</tr>
<tr>
<td>Backbone</td>
<td>Prominent, saw-toothed</td>
<td>Obvious notches</td>
<td>Few notches</td>
<td>Smooth</td>
<td>Smooth</td>
<td>Flat</td>
</tr>
<tr>
<td>Hip bone</td>
<td>Sharp edges, Depression on sides</td>
<td>Very angular</td>
<td>Angular</td>
<td>Rounded</td>
<td>Sacral ligament visible</td>
<td>Sacral ligament barely visible</td>
</tr>
<tr>
<td>Thurl</td>
<td>V-shaped</td>
<td>V-shaped</td>
<td>Flattened V</td>
<td>U-shaped</td>
<td>Well fleshed</td>
<td>Flat</td>
</tr>
<tr>
<td>Pin bones</td>
<td>Sharp, no fat on points</td>
<td>Angular, fat pad on points</td>
<td>Feel smooth, padded</td>
<td>Rounded</td>
<td>Rounded</td>
<td>Well rounded</td>
</tr>
<tr>
<td>Tail head</td>
<td>Very depressed</td>
<td>Depressed</td>
<td>Depression</td>
<td>Depression is fuller</td>
<td>Full but firm, ligaments visible</td>
<td>Full and obviously fat</td>
</tr>
</tbody>
</table>

NB: Sacral ligament is the ligament visible between the hip bone and backbone.
with cows drying off or low lactose milk tests. Therefore, using Table 3 allows farmers to make strategic drying-off decisions during the autumn. For example, mid-October, if a cow is 2.5 and is a February calver, she should be dried off. This is even more important if she is a first-lactation animal.

You may feel these drying-off rules are a degree extreme and that condition can be gained in a shorter dry period. However, in the last eight weeks of pregnancy, cow liveweight increases by almost 0.6kg per day due to the growth of the foetus and placenta alone. Consequently, over this eight-week period, a well-fed animal achieving a good daily liveweight gain of 1kg is only equivalent to about 0.4kg in actual body weight and will result in an increase of only about 0.5 units in condition score. Taking into consideration that during the actual process of drying off, where cows do not put BCS on and may actually lose some for a good week or two, by mid-November mature cows need a minimum condition score of 2.75-plus, to hit the target calving condition score of 3.25 by February.

WINTER
The winter feeding period is a crucial time where cows should be mob-managed and fed according to the level of condition they need to gain. Once-a-month sorting of thin and fat cows, early and late calvers will allow farmers to achieve the target of no more than 15% of the herd at <3.25 at calving. Unfortunately, even with this active management there will always be a cow that is incredibly hard to flesh and a cow that is exceptionally good at looking after herself, but without management there would be a whole lot more. Farmers should also take this opportunity to mob together younger and lighter cows to reduce competition with mature heavier cows.

SPRING
Once a cow has calved, the aim is to reduce BCS loss to less than 0.5 score and have no more than 15% of the cows at less than 2.75 at mating. Calving condition will have a huge bearing on this target, but getting cows to grass and supplementing them adequately post-calving will be critical to avoiding excessive condition score loss. Where cows and heifers are <2.75 or are rapidly losing weight, once-a-day milking is again the best tool to keep a cow milking and organise their chances during breeding. Essentially, having the herd right at calving, combined with good spring feeding, simplifies management by resulting in a herd which requires less intervention and less proactive management of the mating season compared to a herd which calves light and is fed poorly.