FARMING NOTES *from* Kingshay

BODY CONDITION SCORING

Body Condition Scoring (BCS) is a simple and effective farm management tool. It is a measure of body fat/energy reserves, that can be used to aid decisions or troubleshoot issues as they arise. The fine tuning of nutrition throughout the lactation and dry period improves the overall nutritional status of the herd, leading to improved health, milk production and reproduction. These are all factors that will impact on farm profitability.

Key Points

- BCS regularly. The change in BCS is more important than the absolute value
- Over fat or over thin cows will create problems at calving
- Key attention should be paid at 100 days pre-drying off to allow time for BCS management.

When To BCS

The BCS of every cow should be recorded at calving, 60 days' post calving, 100 days before drying off and at drying off. This regular scoring allows you to adjust your routine and ensure that cows reach a condition score of 2.5 to 3.0 at calving. **Use the BCS sheet attached to find out if your BCS management is on target.**

TARGET BCS AT DIFFERENT STAGES OF LACTATION:

Stage of Lactation	Target BCS
At calving	2.5 - 3.0
60 days post calving	2.0 - 2.5
100 days before drying off	2.5 - 3.0
At drying off	2.5 - 3.0

AHDB Dairy

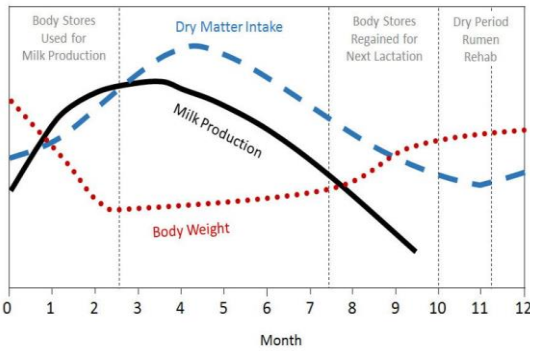
Why Is BCS So Important?

Condition at Calving:

Calving in at the correct BCS (2.5 to 3.0) will maximise production and reproduction.

Cows that are not at optimum BCS at calving, i.e. fat cows (>3.0) or thin cows (<2.5) are more prone to metabolic problems, such as milk fever, displaced abomasum, ketosis or fatty liver syndrome, as well as dystocia or calving trouble and retained placenta.

NEGATIVE ENERGY BALANCE POST CALVING



Penn State Extension

BCS has a significant impact on Dry Matter Intake (DMI).

Over fat cows have reduced appetites in early lactation whilst thin cows have low DMI. Therefore, the cows that are not at optimum BCS at calving will have reduced DMI. This will extend the period of Negative Energy Balance (when cows use their energy reserves to fill the gap between the amount of energy they consume and their production needs). See graph.

As well as metabolic diseases, such as fatty liver and ketosis **Negative Energy Balance in early lactation results in:**

- Lower immune response
- Lower oestradiol production – sufficient oestradiol is required for ovulation
- Increased anoestrus – where oestrus has not been observed
- Lower luteinising hormone (LH) Pulse – LH plays a central role in reproductive performance
- Smaller follicle growth – likely to result in decreased pregnancy rates.

Cows should be managed to lose 0.5 or less of a score in the first 30 days of lactation. If your cows are losing more than this then either the transition programme needs adjusting or the energy density of the lactation ration needs improving.

LIVESTOCK

Controlling Weight Loss In Early Lactation Is Vital

Research has shown that it is the rate of BCS change that affects the cow's ability to conceive (see table) rather than the actual condition score at the time (unless the score is below 1.5). See our Dry Cow Feeding Farming Note for further details.

THE EFFECTS OF BCS CHANGE AND REPRODUCTIVE PERFORMANCE

Body Condition Score Loss (weeks 1 to 5 after calving)	< 0.5	0.5 -1.0	>1.0
Interval to first ovulation (days)	27	31	42
Calving to first service interval (days)	48	41	62
First service pregnancy rate	65%	53%	17%

Excessive BCS loss between calving and first insemination is associated with poor reproductive performance, leading to:

- Increase in the number of days open
- Increase the % of cows that are not cycling at the end of the voluntary waiting period
- Less likely to conceive at first AI
- More likely to experience embryo loss and embryo quality may also be reduced
- Calving interval will tend to be increased by 8.5 days when cows lose 1 BCS, relative to losing only 0.5 BCS. Increasing the BCS loss by >1 point will extend the calving interval by 19 days. With average costs of extended calving interval at £4.90 per day (at a milk price of 30 ppl), the cost of BCS loss soon accumulates.

One unit of BCS is equivalent to approximately 10% body weight c. 60kg of liveweight:

- To gain 1 kg of liveweight gain per day, the cow needs between 32 – 38 MJ of ME
- Losing one 1 kg of liveweight per day provides 16 MJ of ME towards milk production

So, it's very expensive (energetically and financially) for a cow to increase BCS to then lose it to milk production.

Managing BCS:

If cows are too thin in late lactation:	If cows are too fat in late lactation:
Extra energy and protein fed in the dry period will be partitioned into the calf, leading to a greater risk of difficult calvings, retained cleansings, low DMI and increased risk of milk fever and ketosis.	You are probably feeding too much purchased feed
Dry Cow Management:	**Fresh Cow Management:**
Feeding a high-energy diet during the close-up dry period results in increased BCS loss at calving and increased time to the next pregnancy.	How we manage cows post calving can have a big impact on weight loss in early lactation. Many farms have adopted a transition period pre-calving, but there is increasing evidence that the management of cows within the three weeks' post calving can have a bigger effect in improving herd fertility
Cows fed higher-fibre, controlled energy diets during the transition period, have been linked to lower BCS loss during the first 6 weeks following calving and better reproductive performance.	

The areas that have been shown to minimise BCS changes post calving include:

- Reducing stocking density of cubicles and increasing cow comfort and lying times
- Increasing feed space to a minimum of 600mm per head
- More control and monitoring of disease including mastitis and metritis.

Protein Reserves

During the period of Negative Energy Balance up to 5% of the weight loss may be protein reserves. Intensified by very low protein diets fed for extended periods, the impact can be reduced by diets with good levels of protein, the use of protected amino acids, or feeds with a good supply of Methionine (ratio maintained at 3:1 Methionine: Lysine).

BCS describes the state of fat balance, so will not give a full assessment of metabolic state as it does not take protein degradation into account. When condition scoring, look for the protein 'strands' that run horizontally across the ribs as demonstrated in the picture. If these strands are not obvious, there may be a problem with the protein-energy balance in the diet – **consult your nutritionist.**

If cows are not losing condition in early lactation, then it will be important that cows in later lactation do not gain too much condition as this will be detrimental in the subsequent lactation. Central to this is maintaining good fertility and considering feeding and grouping options in mid and late lactation.

See the attached guide for HOW TO CONDITION SCORE

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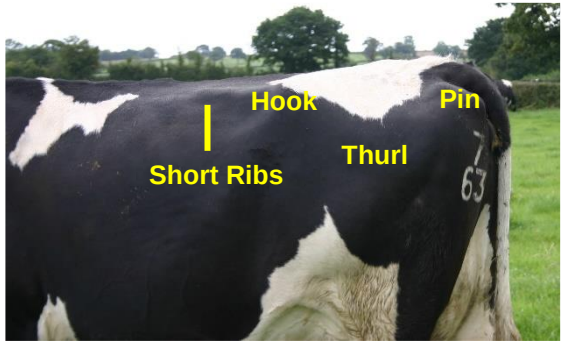
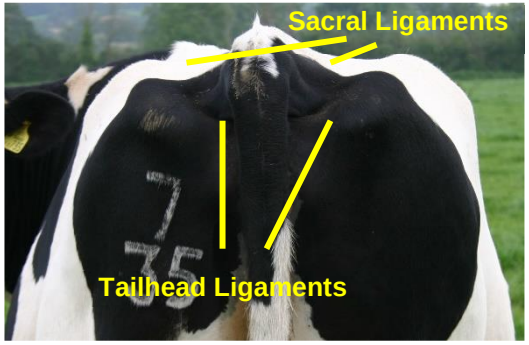
HOW TO BODY CONDITION SCORE

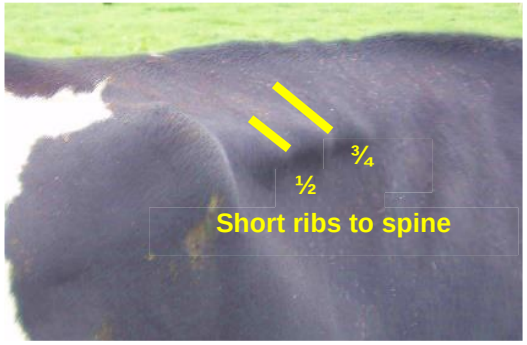
Using a structured evaluation system to Body Condition Score (BCS) dairy cows will lead to more accurate recording. Ferguson *et al.* described a system in 1994 which evaluates areas of the pelvis and loin to measure BCS on a scale from 1 to 5 in increments of 0.25. The system concentrates on scores from 2.0 to 4.0. BCS outside these values are extreme, indicating serious problems.

Anatomy

Body condition scoring of dairy cows focuses on the evaluation of the pelvis and loin. Major sites used in the scoring process are shown in these photos.





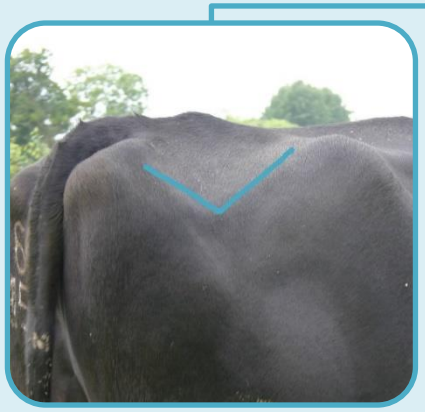


Step 1

Look at the side view of the cow

- Cows with a V angle will be BCS 3 or less
- Cows with a U angle will have a BCS greater than 3
- If a cow has a BCS of 3.0 or 3.25, the decision between the V and U can be difficult. Move to the back of the cow to look at the hooks and pins:
  - Sharp angular hooks and pins < 3 (V)
  - Smooth, round and covered in fat > 3 (U)

What is the angle between the hooks and the pins?
Use the thurl as a reference point.
Is it shaped like a "V" or a "U"



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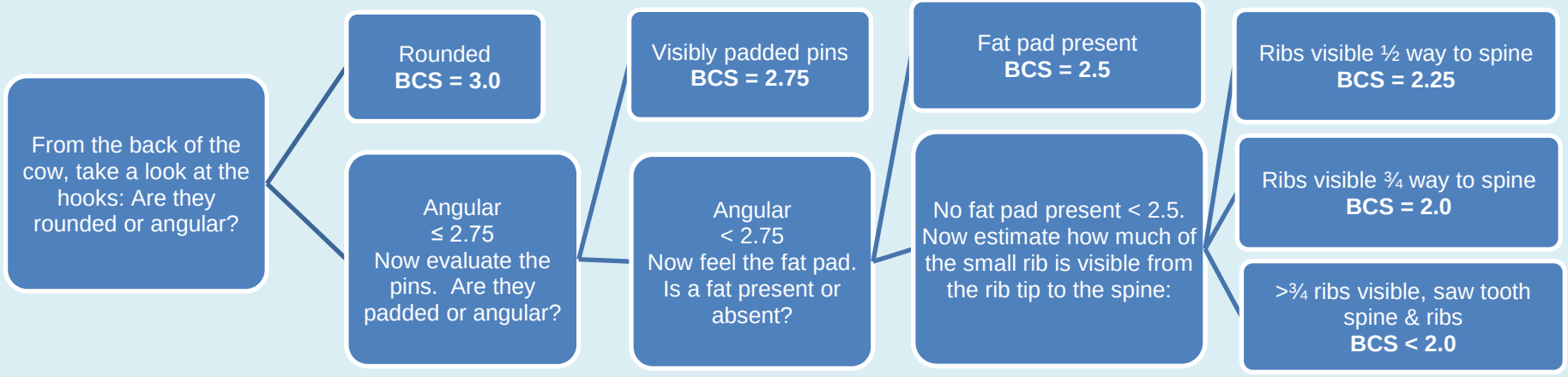
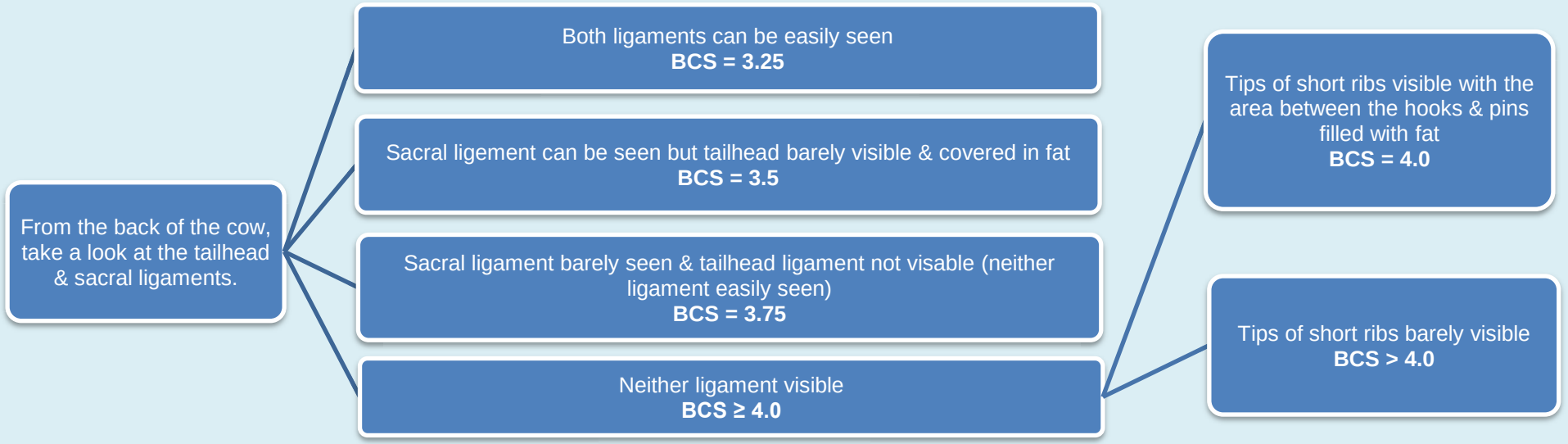
Step 2

A: For cows with V angle - a BCS 3 or less



B: For cows with U angle - a BCS >3



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Body Condition Scoring Record Sheet

Date: .....

Body Condition Score the whole herd regularly.
Paying attention to cows:

- At calving
- 60 days in milk
- 100 days before drying off
- At drying off

CONDITION SCORE TARGETS

Stage of Lactation	Target BCS
At calving	2.5 - 3.0
60 days in milk	2.0 - 2.5
100 days before drying off	2.5 - 3.0
At drying off	2.5 - 3.0

See our Farming Note on '*Body Condition Scoring*' and the accompanying sheet on *'How to Body Condition Score'*

Plot BCS and days in milk information on graph over leaf

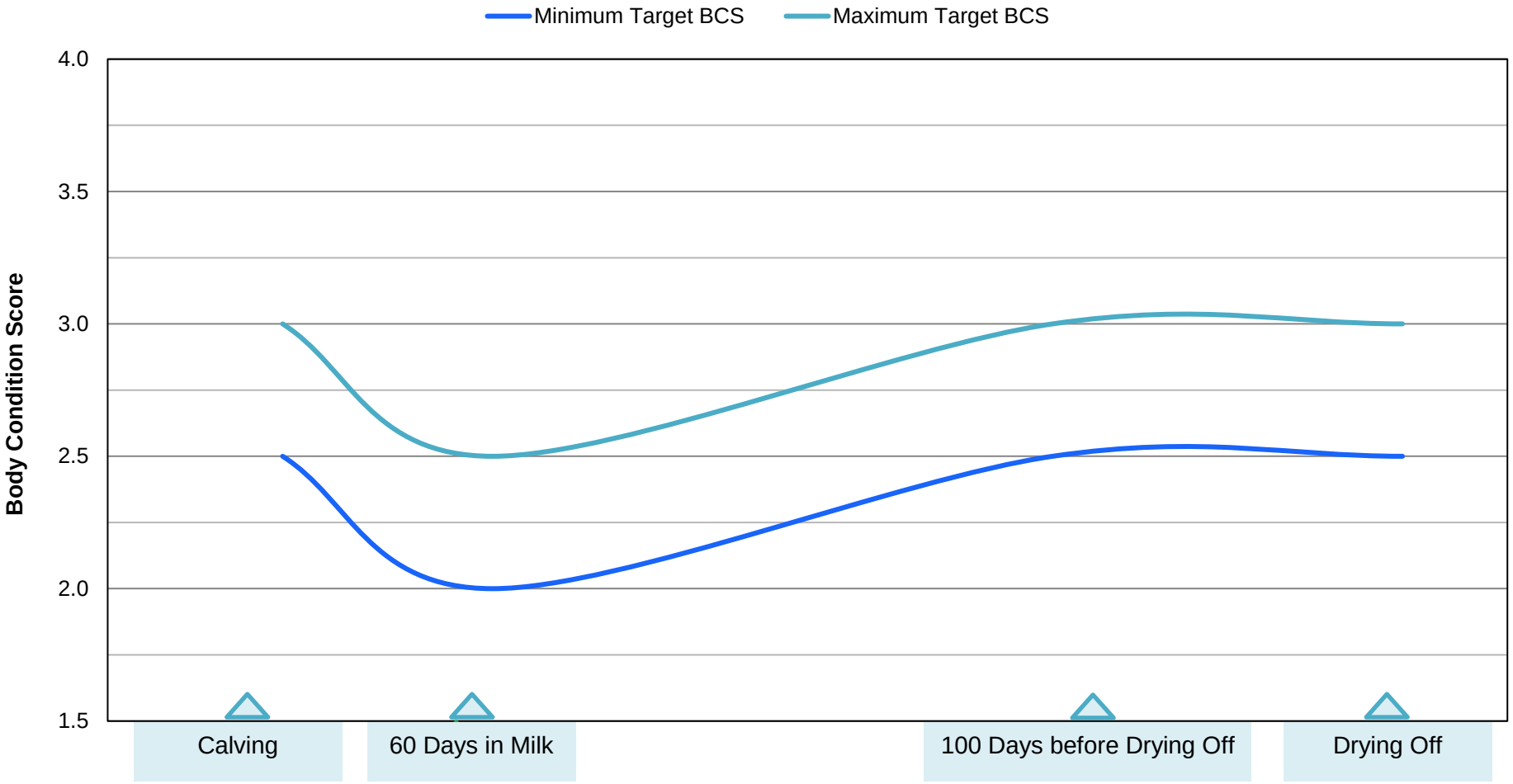
Cow No.	Body Condition Score	Days in Milk	Days to Calving	Comments

You can also record Condition Scores in computer packages such as NMR Interherd

Body Condition Score Graph

Take a sample of cows at different stages of lactation and plot on the graph. Cows plotted within the blue lines are meeting target BCS. Cows below the minimum line are under conditioned, whilst cows above the maximum line are over conditioned. Modify the diet accordingly to meet BCS targets.

See our Farming Note on '*Body Condition Scoring'* and the accompanying sheet on *'How to Body Condition Score'*.



This is a guide only; scores will vary depending on lactation and breed of animal.

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