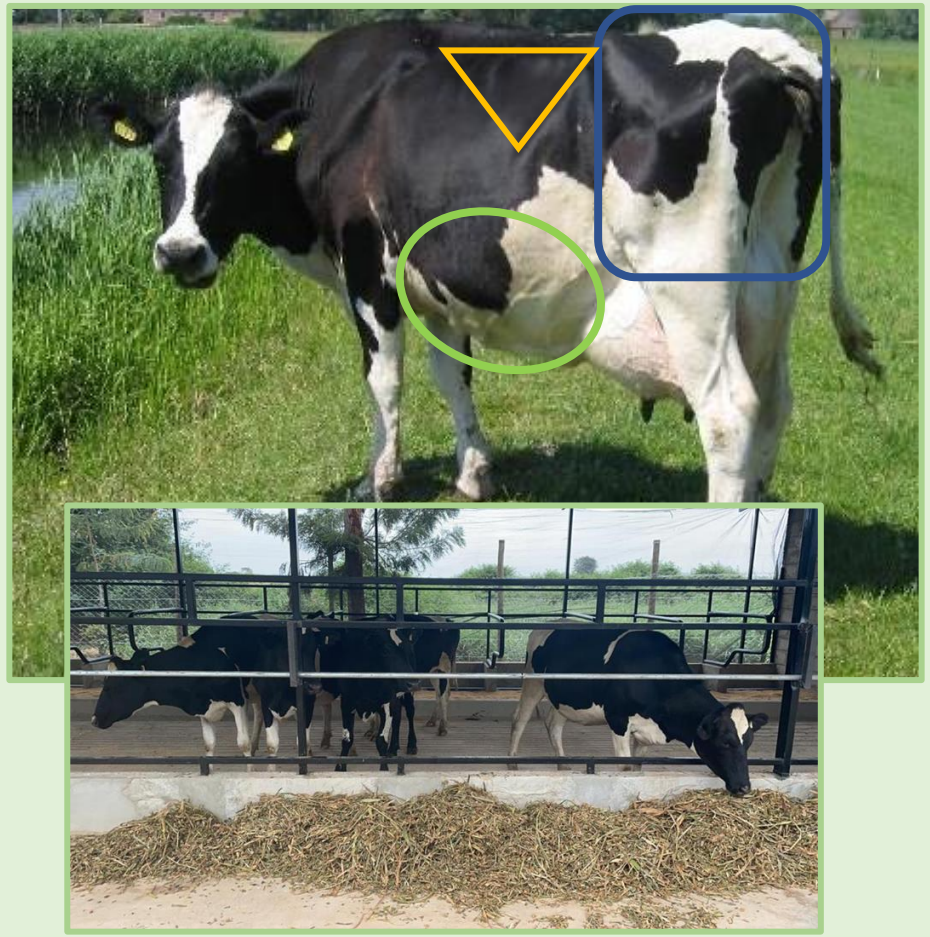
Theme 3: Animal Nutrition and Feeding

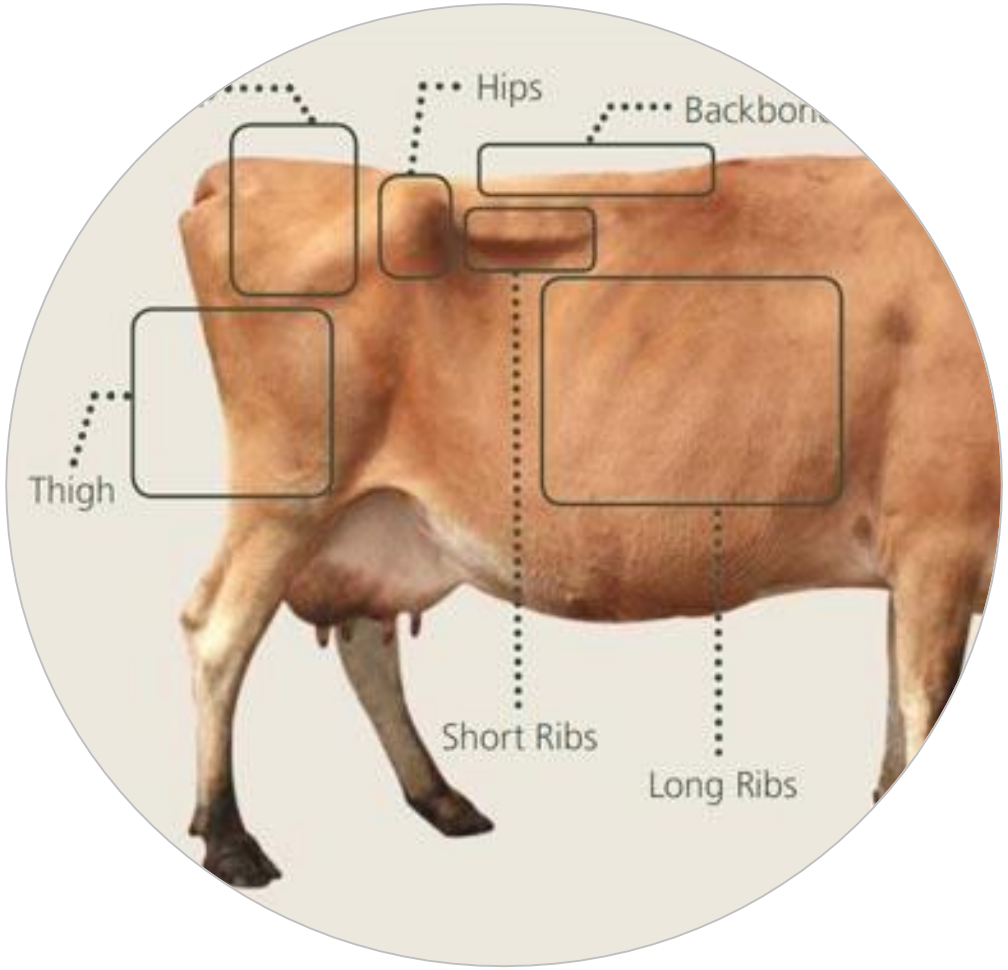
REVIEWING FEED INTAKE, RUMEN FILL, BODY CONDITION SCORING (BCS) - Level 1

Topic	Training & information Content
3.1	Estimating feeding value of fodder & feed on dairy farms
3.2	Sampling feeds & forages/analysis interpretation
3.3	Estimating Dry Matter intake for various breeds/age categories of dairy cattle in the tropics
3.4	Reviewing feed intake, rumen fill, Body Condition Scoring (BCS)
3.5	Life weight estimation of cows
3.6	Rumen fermentation
3.7	Mineral & vitamin requirement, guidelines
3.8	Manure scoring and evaluation
3.9	Guidelines for ration calculations for various breeds, heifers, lactation stage (Rumen8)
3.10	Use of Rumen8 software for ration calculation
3.11	Optimization of ration with Rumen8
3.12	Feeding management guidelines
3.13	Feeding management of dry cows/close up
3.14	Feeding systems
3.15	Metabolic disorders
3.16	Scoring locomotion and hoof condition
3.17	Mycotoxin in dairy cattle nutrition
3.18	Heat stress in dairy cattle nutrition
3.19	Monitoring feeding management, using KPIs (based on Rumen8)



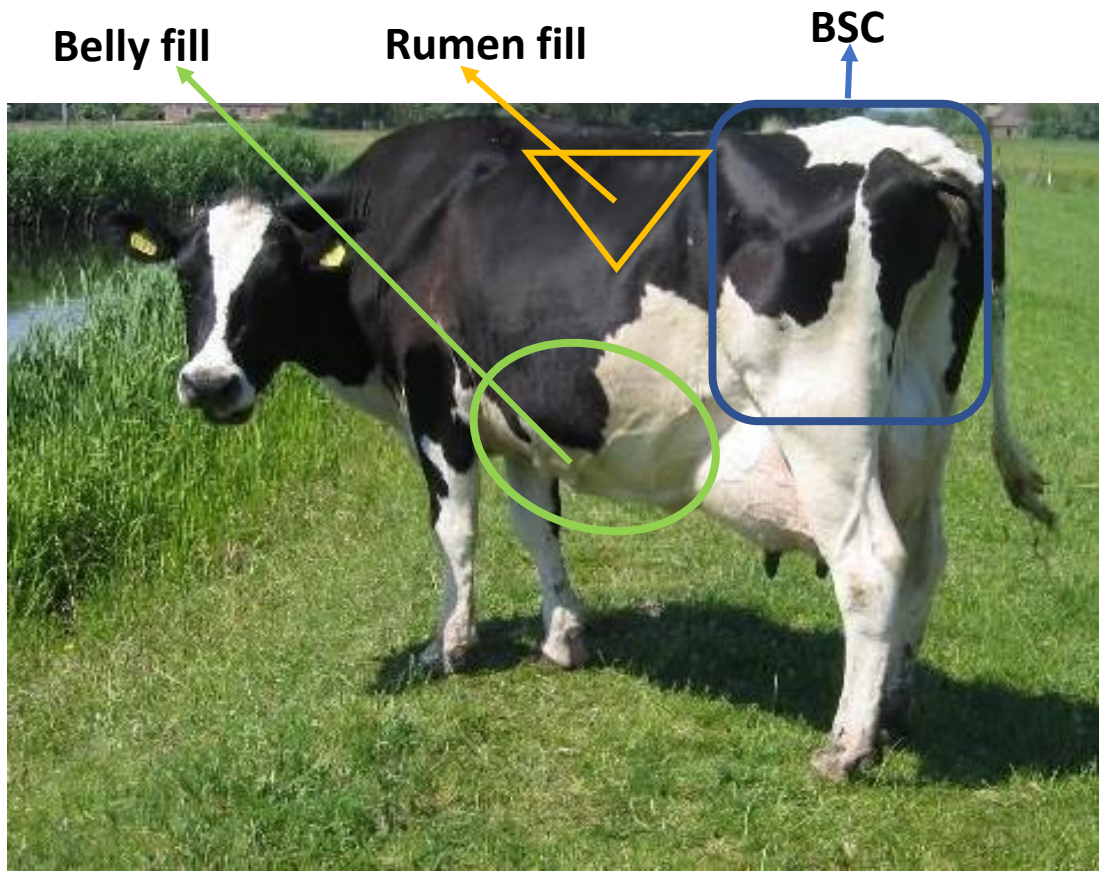
1. You will learn about (learning objectives):

- ❑ Rumen fill and factors affecting rumen fill.
- ❑ Body condition score (BCS) and how to assess cows for scoring.
- ❑ Feed intake in relation to rumen fill and body condition score.



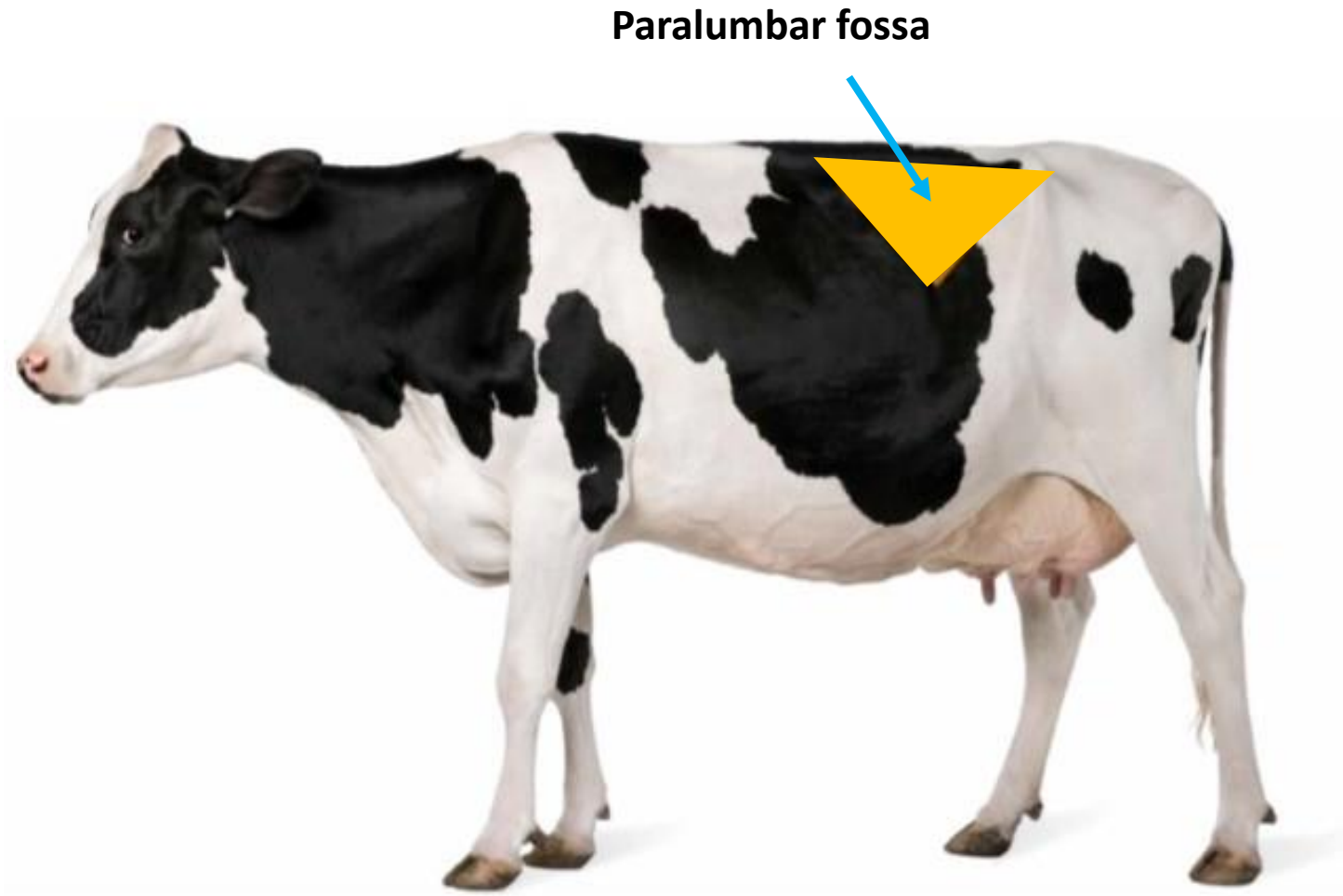
2. Background

- The amount of feed a cow consumes per day is know as feed intake and can be assessed in several ways;
  - Rumen fill is the total amount of liquid and dry matter in the rumen on a daily basis.
  - Belly fill score is the amount of feed intake in less than week and can drop dramatically in two days.
  - Body condition scoring (BCS) is a technique for assessing the condition of livestock at regular intervals and can be effected from one week on wards.



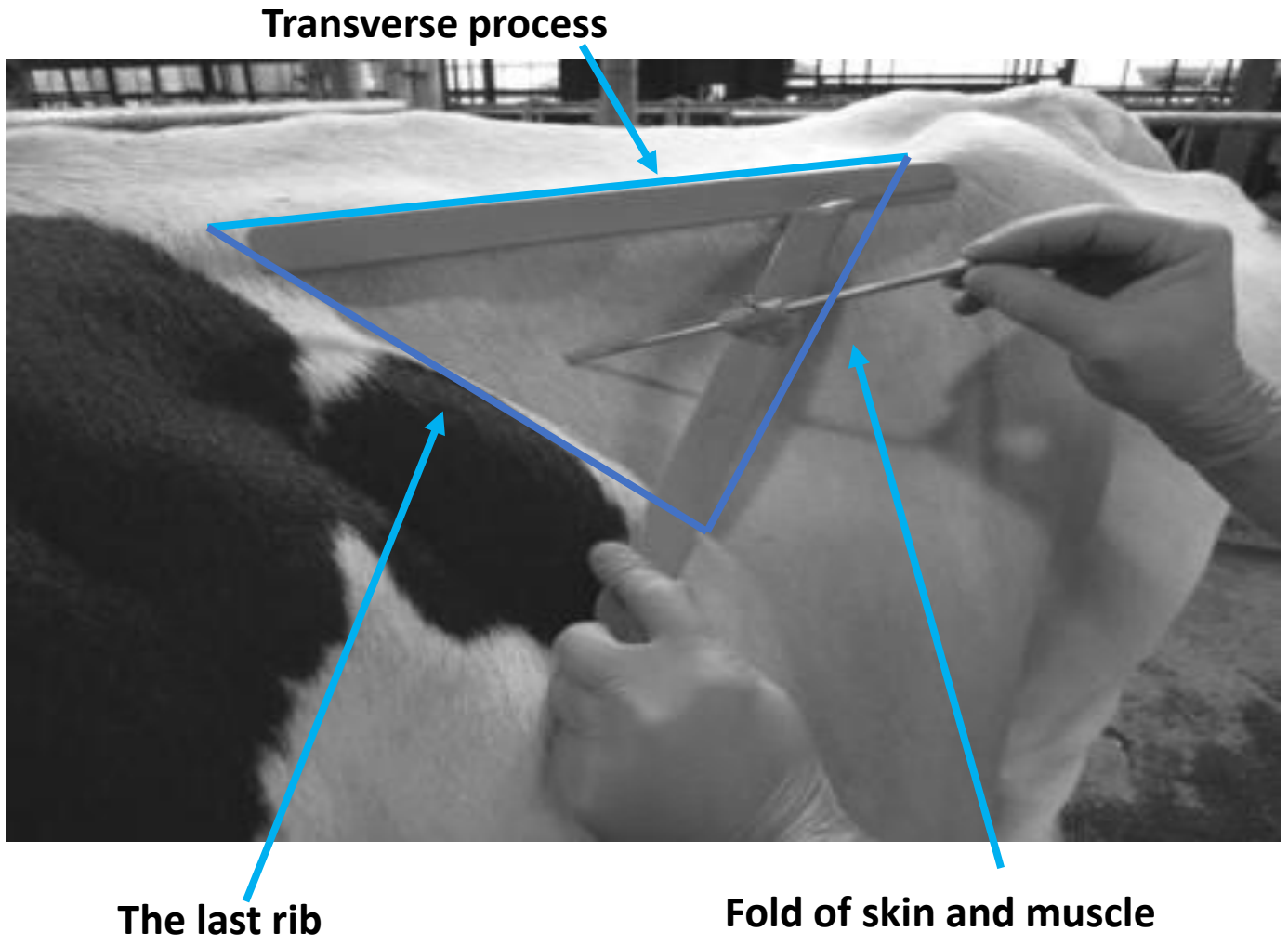
3. Rumen fill

- Rumen fill scores can only be evaluated from the left hand side in the paralumbar fossa.



4. Position of Rumen fill scoring

- When rumen fill is poor, this area is hollow/concave - often described as the “danger triangle”. This signals that the rumen is empty, and the cow has not been eating as much as she should on a daily basis



5. Rumen fill assessment: Score 1

Rumen fill is scored on a five point scale:
1 = very poor rumen fill to 5= full rumen.

- Dip deep in the left flank, more than one hand width after last rib.
- Large depth when dipping is observed.
- Skin fold from hook bone falls vertically, so hollow shape looks rectangular.
- This shows the cow has eaten nothing in the last 24 hours.

Score 1

6. Rumen fill assessment: Score 2

- Dip in left flank after last rib with one hand deep.
- Skin fold from hook bone runs diagonally, so hollow shape looks like a triangle.
- Not unusual in first week after calving, but after that it signifies a problem - too little feed intake.

Score 2

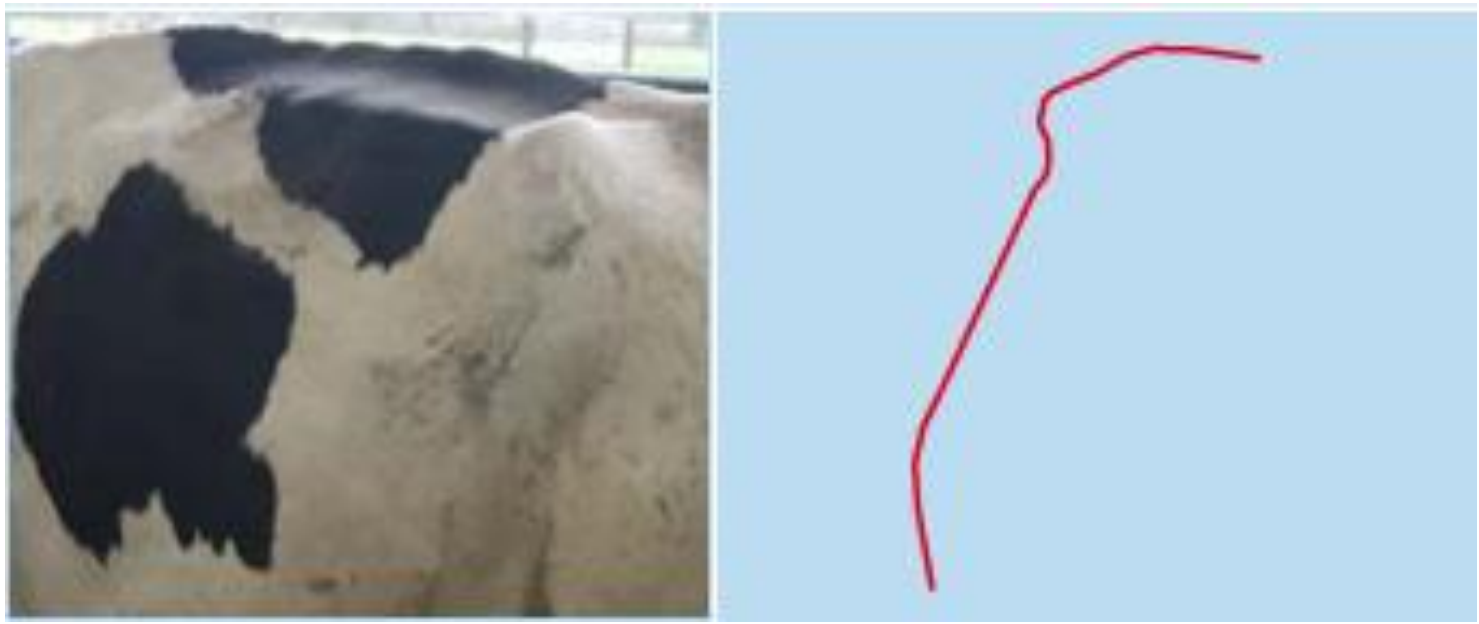
7. Rumen fill assessment: Score 3

- Slight dip visible in left flank, after last rib.
- Skin fold from hook bone is hardly visible.
- This is the desired score for milking cows having sufficient feed intakes.

Score 3

8. Rumen fill assessment: Score 4

- No dip is visible in left flank, after last rib.
- Skin fold from hook bone is not visible.
- This is the correct score for milking cows at the end of lactation and through the dry period.
- It is the target minimum score for pre-calvers.



Score 4

9. Rumen fill assessment: Score 5

- Skin is flat or slightly bulging on the left flank, after last rib.
- The skin over the whole belly is quite tight, and there is no visible transition between the flank and the ribs.
- This score is often seen in pregnant dry cows and cows on a ration with a very high fiber content.

Score 5

10. Rumen fill in relation with feed and Dry matter intake

- Assessing rumen fill is a useful management tool to evaluate;
  - Dry matter intake (DMI): Rumen being filled doesn't mean dry matter requirement has been met.
  - Ration fed: Rations with slower rate of passage have higher rumen fill scores compared to rations with faster rate of passage.

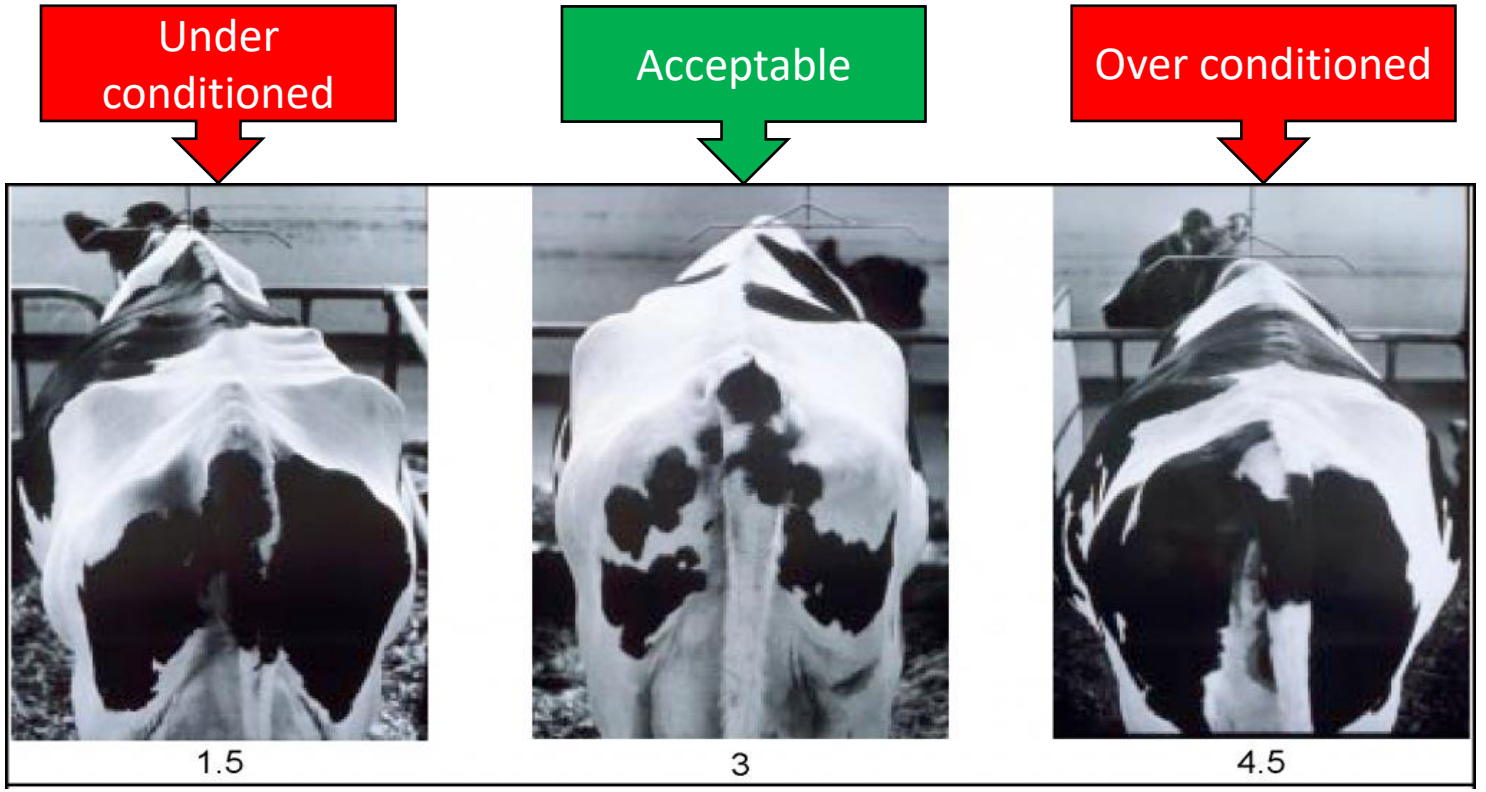
11. Factors affecting Rumen fill

- Where individual cows have low scores, it implies need for further investigation:

    - Are they ill?
    - If the scores in a group are too low or too high, monitor feed intake and inspect the ration.

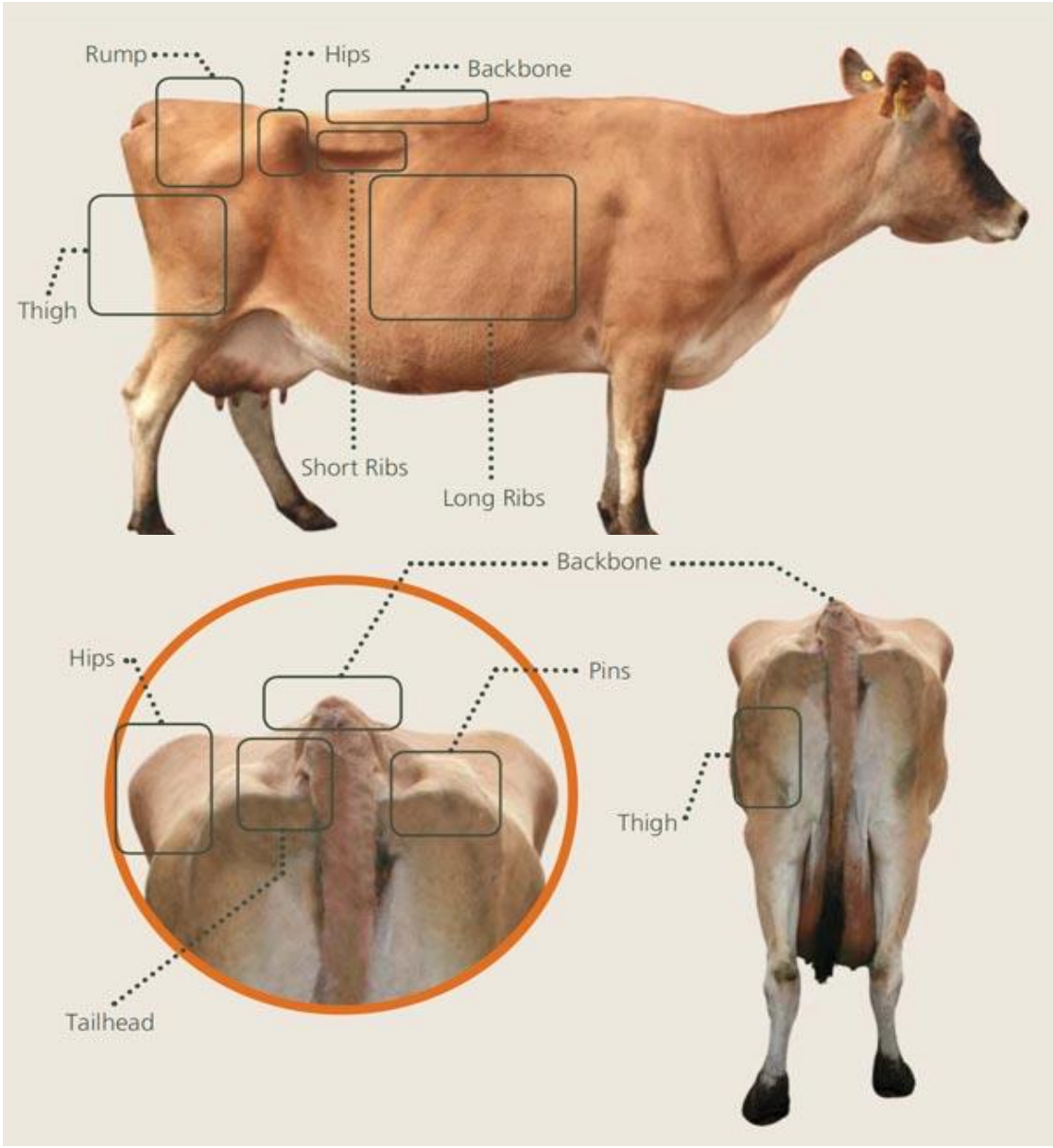
12. Body Condition Scores (BCS)

- BCS is the visual evaluation of the amount of muscle and fat covering the bones of an animal.
- It involves observing specific points on the animal.
- Scoring enables farmers to compare the condition of their cows with recommended targets.

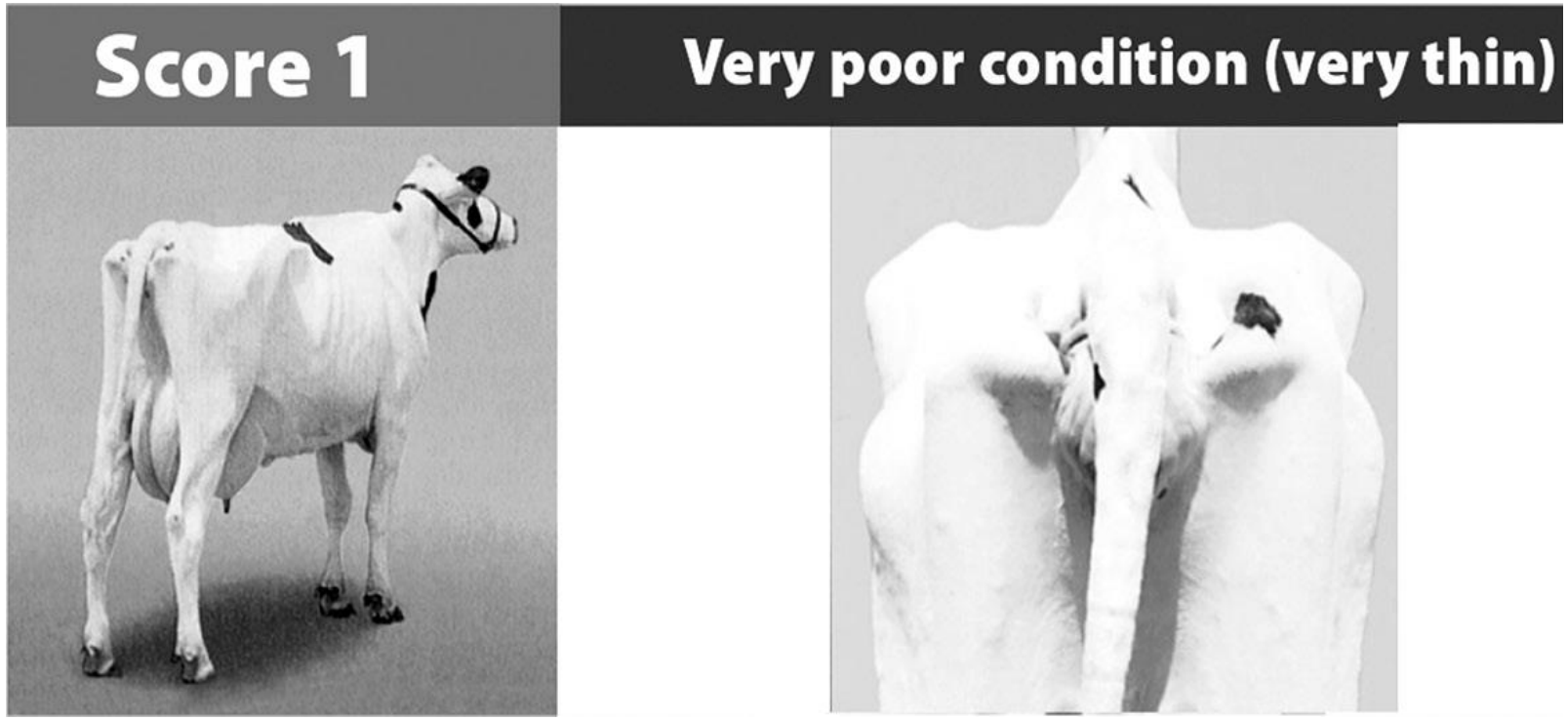


13. How to score Body condition

- The cow is judged from the side and the back/rear, assessing the main parts as shown.

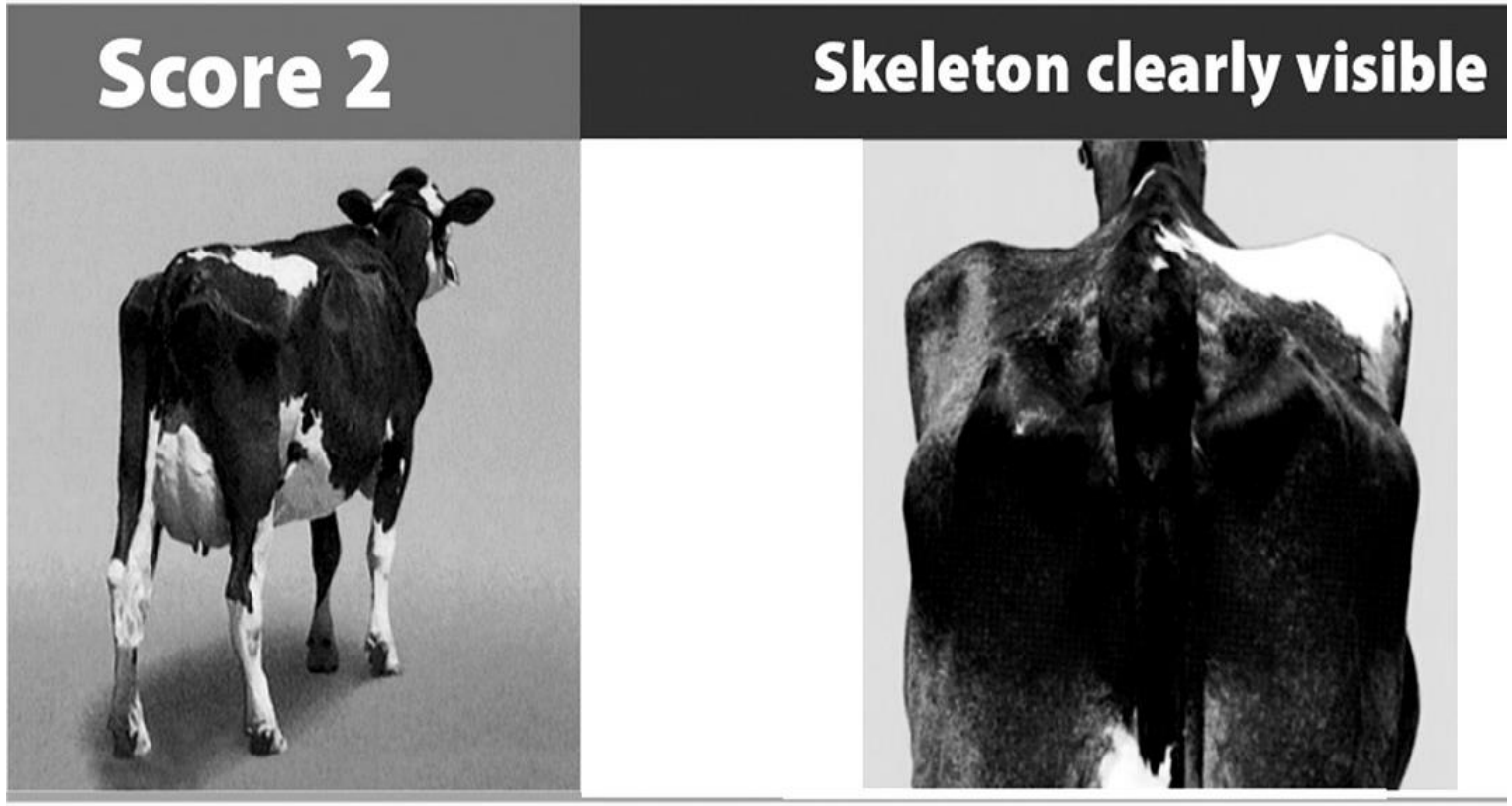


14. Body condition score 1



Score 1

15. Body condition score 2

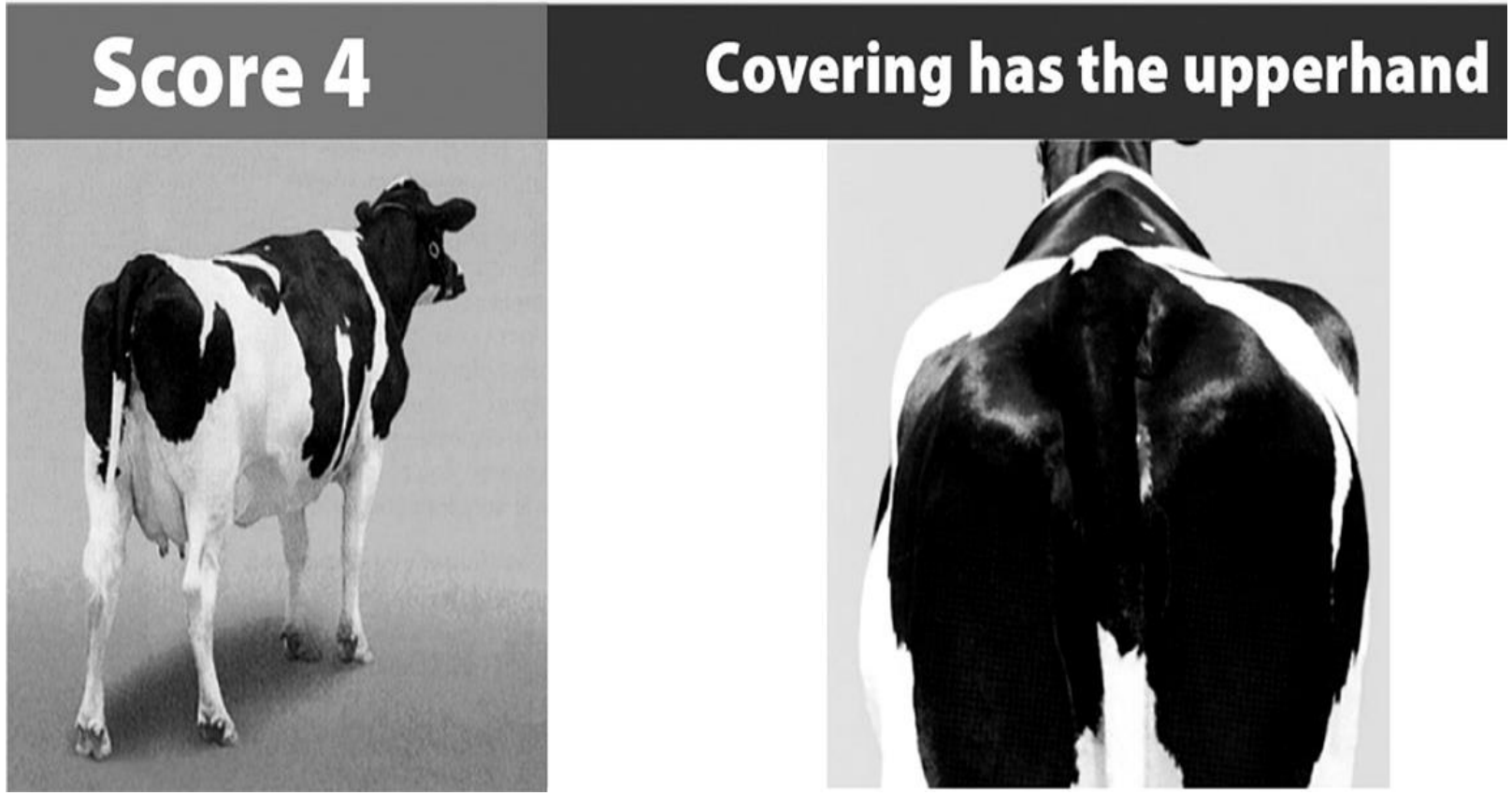


Score 2

16. Body condition score 3

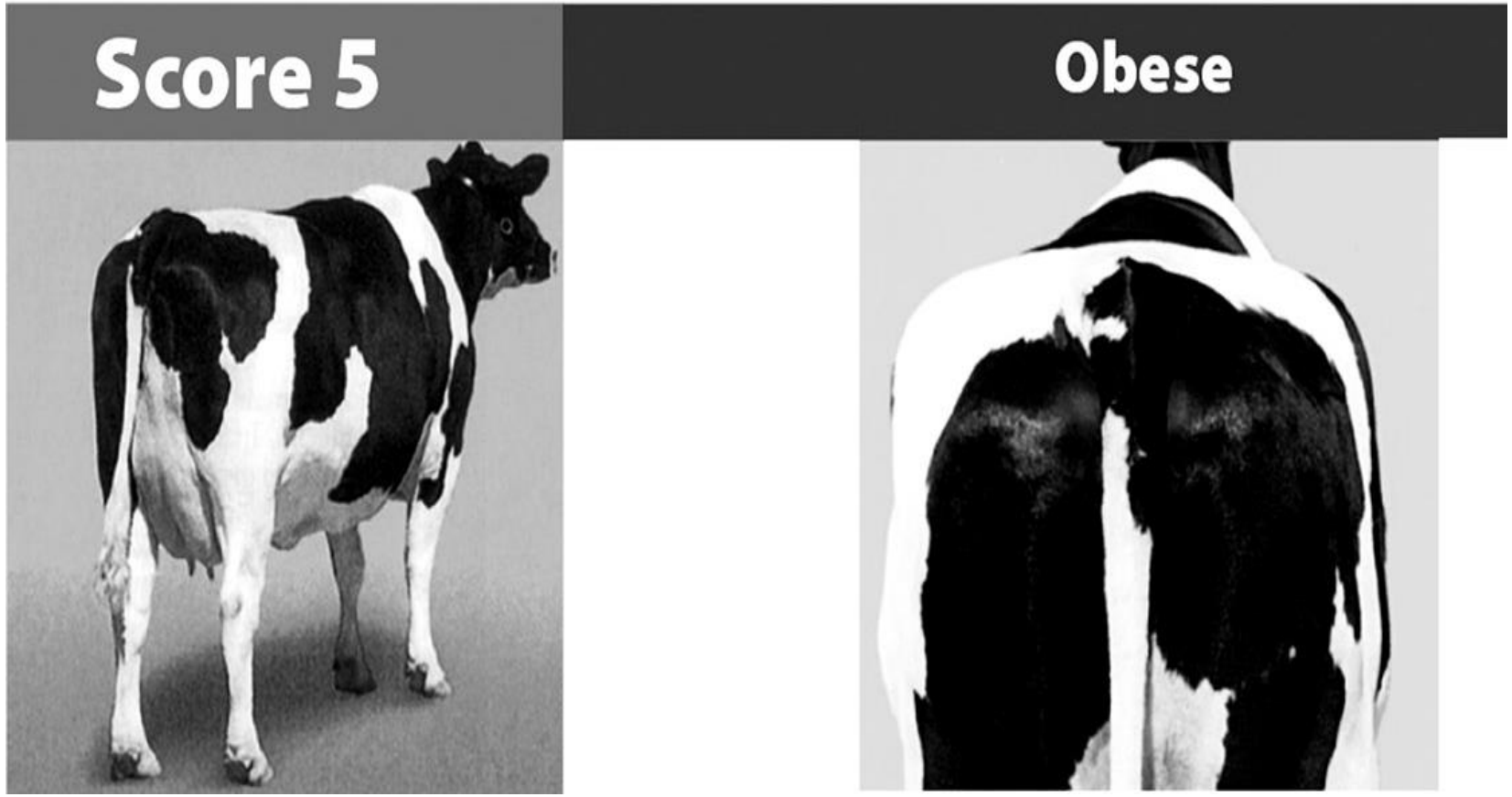
Score 3

17. Body condition score 4



Score 4

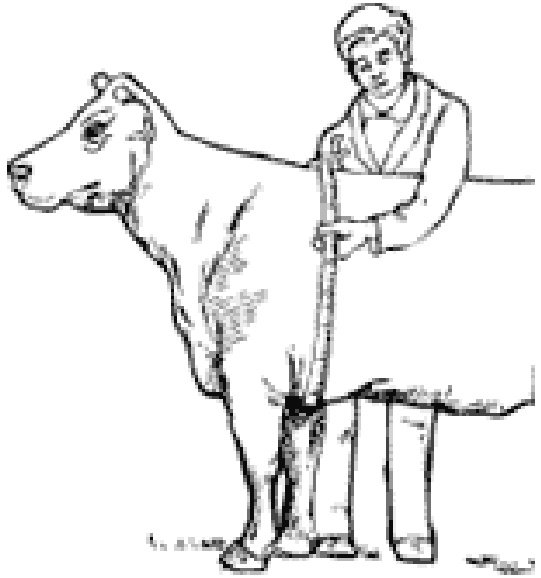
18. Body condition score 5



Score 5

19. BCS in relation to body weight

- A cow’s live weight alone is not a good indicator of body reserves.
- Cows of similar weight could be small and fat, or large and thin. Similarly, cows could have the same body reserves and yet have very different body weights.
- Body condition scoring technique can be used to quickly and reliably estimating the body reserves of cows.



Weighing a cow using a weighing band

Weighing a cow on a weigh bridge

20. Feed management for better BCS

- Maximize feed intake (for example, total mixed ration feeding system is most efficient).
- Adjust energy density of the ration.
- Adjust crude and escape protein levels.
- Provide adequate fiber to prevent off-feed problems or chronic intake fluctuations.
- Check macro mineral (Ca, P, Mg and K) levels and water availability.

- END -