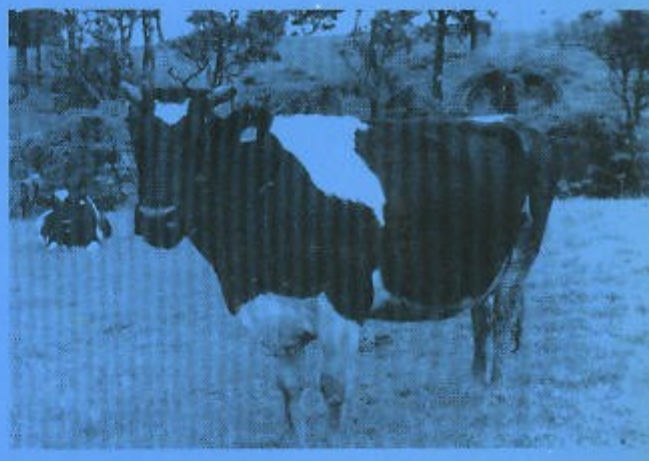

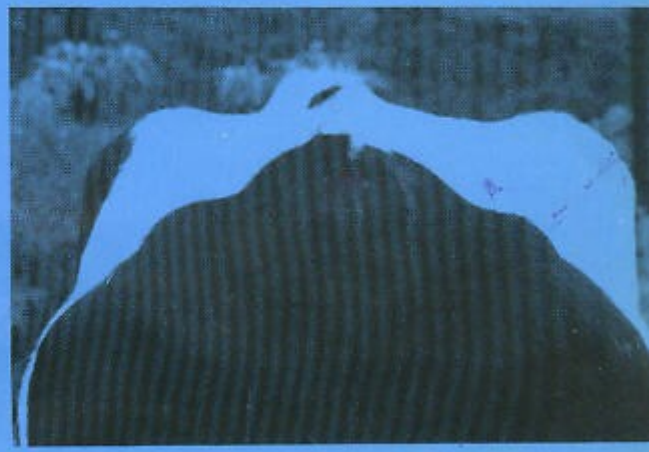

BODY CONDITION SCORING SYSTEM FOR ASSESSING THE NUTRITIONAL STATUS OF BUFFALOES AND CATTLE

A Practical Guide for Farmers

SAREC/NARESA Buffalo Research and Development Programme, Peradeniya, Sri Lanka

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The Importance of Nutrition for Animal Production

Dairy buffaloes and cattle must be maintained at the appropriate level of nutrition to ensure optimum production. Weak and undernourished animals are more susceptible to disease while animals that are too fat will often show low fertility and not give economic returns on investment at a high level of feeding. It is therefore, important for farmers to have the ability to assess the nutritional status of his animals and provide the appropriate feed to ensure profitability. But most farmers do not have the ability to make such an assessment.

Scientists have shown that there is a direct relationship between the level of nutrition and the content of lean meat and body fat in the animal. The variation in the content of lean meat and body fat can be directly related to the body condition of the animal.

This leaflet describes a simple and practical method based on the Body Condition Scoring System to determine the nutritional status of animals.

How can you assess the nutritional status of an animal ?

Scientists have developed a simple numerical scale which brings out a relationship between body muscle and fat mass and the nutritional status of an animal. The Body Condition Scoring System is based on the finding that variations in the body condition score (BCS) reflect the efficiency of production, reproduction and also the health of the animal. It is a more precise method for judging the changes in nutritional status and health of the animal than body weight, as the latter can be affected by genotype and factors such as rumen fill and stage of pregnancy.

The body condition scoring system is a simple and practical method which you can learn to use to assess the nutritional status of an animal. You can use this system as a guide to determine the correct feeding and management practices for your buffaloes and cattle to obtain optimum growth, reproduction and production. Such an approach will ensure that you will receive the best economic returns from your dairy enterprise.

Body Condition Scoring System

The assessment of body condition is made on a scale ranging from one to five. This is based on visual observation and palpation of two or more of the following four points on the body of the animal as shown in Plates 1 & 2.

Plate 1 :
Posterior view of a cow showing area on either side of the tail head and rectum

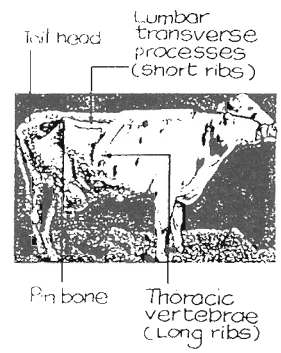


Plate 2.
Lateral view of a cow showing thoracic vertebrae, lumbar transverse process and tuber coxae (pin bone)

1. The area on either side of the tail-head and rectum
2. The pin bones (Tuber coxae)
3. The bones on the spine (Thorasic vertebrae)
4. The short ribs (Lumbar transverse processes)

The condition and appearance of these areas of the animal body reflects the degree of accumulation and mobilization of body nutritional reserves, mostly of body fat. This is directly related to the nutritional status of the animal, which depends on the level of feed intake and utilization. The procedure for determining the condition score is as follows:

1. Note the appearance of the condition of the areas on either side of the tail-head and rectum. Do they appear as cavities or are they well filled ?

2. Palpate the pin bones. Are the borders sharp or rounded ?

3. Note the appearance of the bones on the spine. Are they individually visible or are they covered with muscle and fat ?

4. Palpate the ends of the short ribs. Are they sharp and covered only by skin, or are they rounded and covered by a fat layer under the skin ?

   Method of palpating the short ribs is depicted in Fig. 1

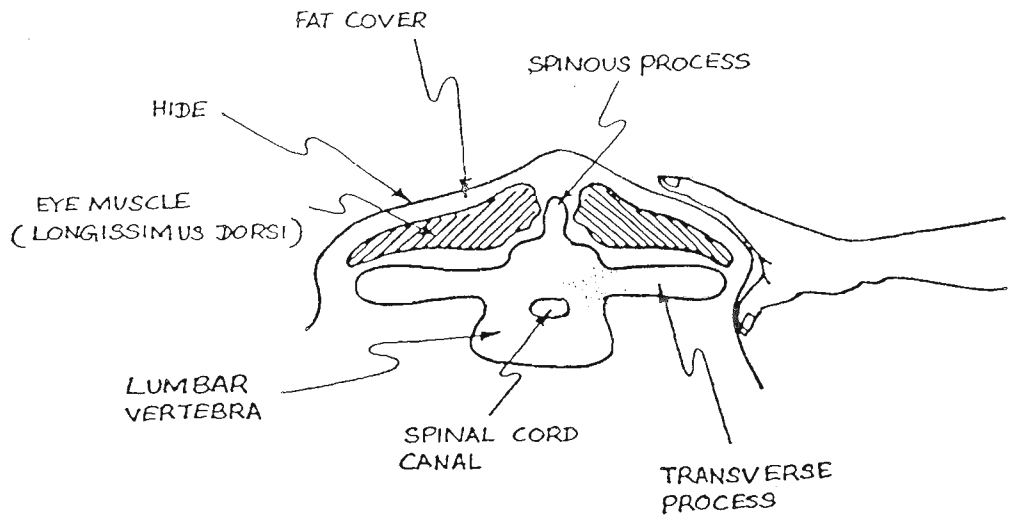


Fig : 01 Method of palpating the ends of short ribs

Body condition scoring systems have been developed for both buffaloes and cattle as well. Table 1 shows the criteria for assessing body condition of buffaloes and Table 2 shows the criteria for cattle.

Table 1 : The Body Condition Scale for Buffaloes

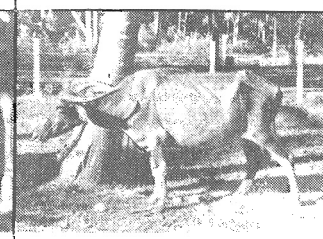
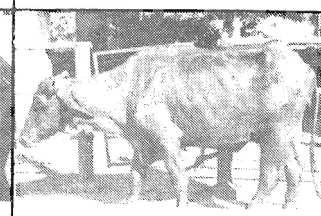
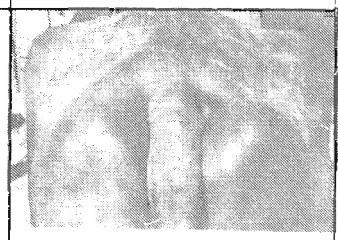
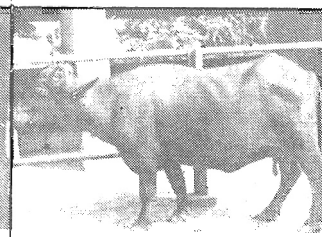
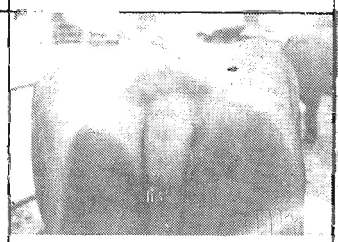
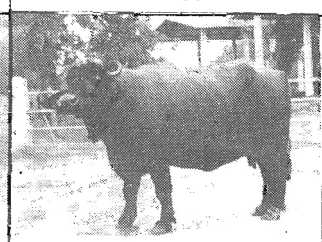
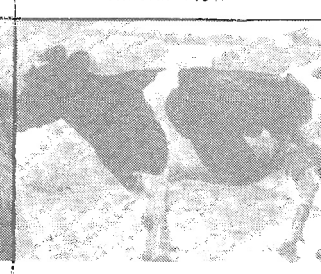
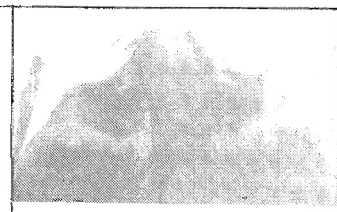
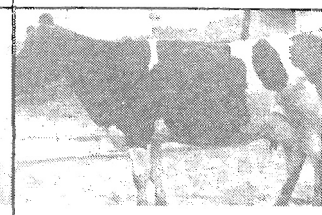
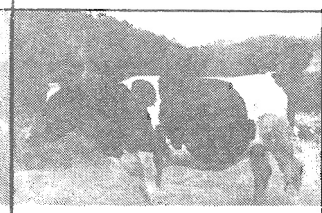
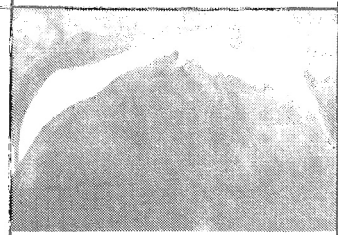
Score	Posterior View	Lateral View	Visual and Palpable Features
1	 Plate 3a	 Plate 3b	An emaciated animal. Cavities on either side of the tail-head are very pronounced; borders of pin bones very sharp; individual bones of spine and their borders are visible, ends of short ribs are very pronounced and can be easily palpated; no fat layer under the skin.
2	 Plate 4a	 Plate 4b	A thin animal. Cavities are less pronounced; borders of the pin bones are sharp; individual bones of spine are less visible; ends of short ribs less sharp but can be palpated; thin layer of fat under the skin.
3	 Plate 5a	 Plate 5b	A lean and healthy animal. Cavities are not present; borders of pin bones are rounded; individual bones of spine are not visible and muscles are detectable over the bones; ends of short ribs can still be palpated with firm pressure; a medium layer of fat under the skin.
4	 Plate 6a	 Plate 6b	A fat animal. Cavities are filled out; borders of pin bones are rounded; individual bones of spine are not visible and there is muscularity over the bones; ends of short ribs can only be palpated with strong pressure as they are covered with a thick layer of fat under the skin.
5	 Plate 7a	 Plate7b	An obese animal. Buffaloes or cattle of this condition are usually not found in village farms. Cavities are not present; borders of pin bones are very rounded; individual bones of spine are not visible and there is abundant muscle and fat over the bones; ends of short ribs are not palpable as they are covered with a very thick layer of fat.

Table 2 : The Body Condition Scale for Cattle

Score	Posterior View	Lateral View	Visual and Palpable Features
1	 Plate 8a	 Plate 8b	An emaciated animal. Cavities on either side of the tail-head are very pronounced; borders of pin bones very sharp; individual bones of spine and their borders are visible, ends of short ribs are very pronounced and can be easily palpated; no fat layer under the skin.
2	 Plate 9a	 Plate 9b	An emaciated animal. Cavities on either side of the tail-head are very pronounced; borders of pin bones very sharp; individual bones of spine and their borders are visible, ends of short ribs are very pronounced and can be easily palpated; no fat layer under the skin.
3	 Plate 10a	 Plate 10b	A lean and healthy animal. Cavities are not present; borders of pin bones are rounded; individual bones of spine are not visible and muscles are detectable over the bones; ends of short ribs can still be palpated with firm pressure; a medium layer of fat under the skin.
4	 Plate 11a	 Plate 11b	A fat animal. Cavities are filled out; borders of pin bones are rounded; individual bones of spine are not visible and there is muscularity over the bones; ends of short ribs can only be palpated with strong pressure as they are covered with a thick layer of fat under the skin.
5	 Plate 12a	 Plate 12b	An obese animal. Buffaloes or cattle of this condition are usually not found in village farms. Cavities are not present; borders of pin bones are very rounded; individual bones of spine are not visible and there is abundant muscle and fat over the bones; ends of short ribs are not palpable as they are covered with a very thick layer of fat.

What is the optimum condition score ?

1. It is recommended that animals should have a condition score of above 3 at calving. This can be achieved by drying off the animal two months before the next expected calving date and providing adequate feed during these two months. This will ensure that sufficient body reserves are available for milk production after calving.

   Guidelines of feeding pregnant and postpartum cows are given in the Information Leaflet No. 7 in this series.

2. After calving animals usually lose body condition during the first month or two. The level of feeding should ensure that condition score does not go below 2, and that the condition score begins to improve in 1-2 months after calving. This will ensure efficient and economical milk production and early commencement of sexual cycles. Guidelines for obtaining optimum reproductive performance from your cow are given in Information Leaflet No. 4 in this series.

3. The optimum condition score for dairy buffalo and cows is between 3 and 4.

As shown in fig. 2, maintaining an animal at a body condition of 4 or above is not advantageous in terms of production or reproductive performance. The cow will show a diminishing response to incremental increase of feed (mainly concentrates), until it reaches the maximal potential. But, this level of feeding is not economically advantageous. Guidelines for economic feeding of buffalo and cattle are given in Information Leaflet No. 11 of this series.

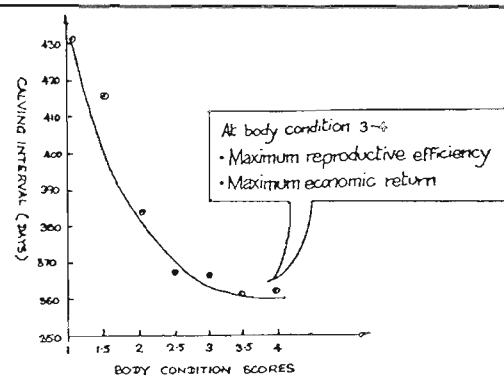


Fig: 02 Relationship between body condition score and calving interval

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