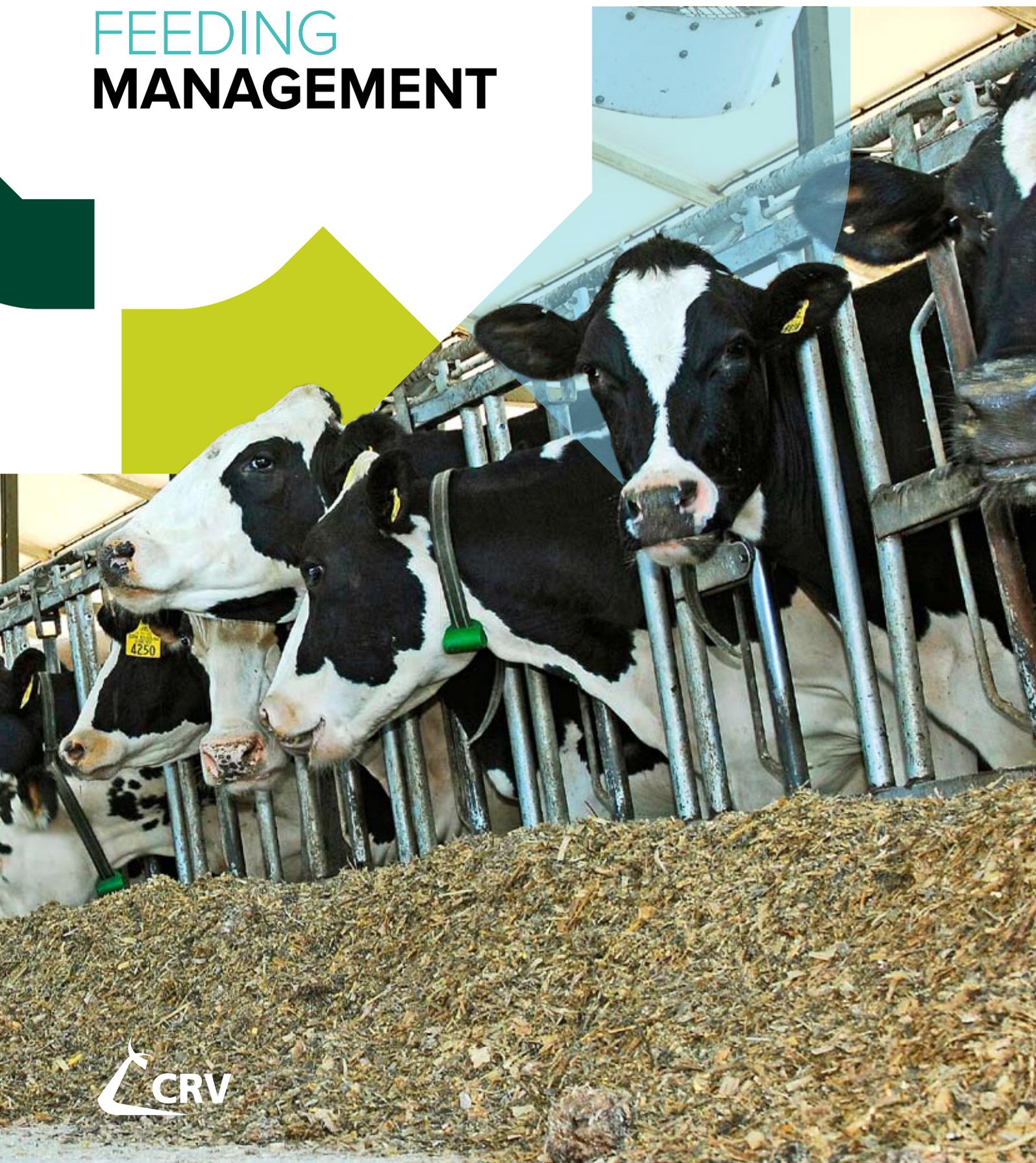


# FEEDING MANAGEMENT



# INTRODUCTION

This edition of CRV Dairy Management Guide consists of practical information on feeding management. Feeding is the main input for cows to produce milk. During different stages of their lives and lactation, cows have different nutritional demands. When a

farmer can meet these demands, the cow will produce milk efficiently. This edition will give you practical advice to help you improve your feeding management and will give you the tools to harness all the possibilities that feeding can offer.

When the information from this publication is implemented in your daily management routine you will:

- Understand the digestive tract of the cow
- Be able to score rumen fill
- Be able to score body condition score
- Understand the nutritional needs of cows during the entire lactation
- Improve feed intake around calving
- Be able to define rations for high and low producing groups or cows
- Be able to define rations for dry cows
- Be able to improve the water supply of your cows.

This publication is part of the CRV Dairy Management Guide series. Other publications are:

- Young stock management
- Reproduction management
- Breeding management
- **Feeding management**
- Health management
- Udder health management
- Hoof health management
- Milking systems
- Housing management
- Dairy farm economics

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## CHAPTER 3

# RUMEN FILL AND BODY CONDITION SCORE

Body condition score (BCS) is an excellent management tool to determine accurate feeding decisions. It also tells the farmer a lot about the fertility results that can be expected from this cow (see paragraph 5.5).

The main disadvantage of the BCS is that it can only be measured weekly or monthly. To monitor day-to-day feed intake and feed quality there are other indicators to assess your feeding management. The most suitable are rumen fill (RF), faecal consistency (FC) and faecal undigested fraction (FUF). These indicators can help you to take more immediate measurements to increase the feed intake of your cows. For all three indicators a scoring system has been developed.

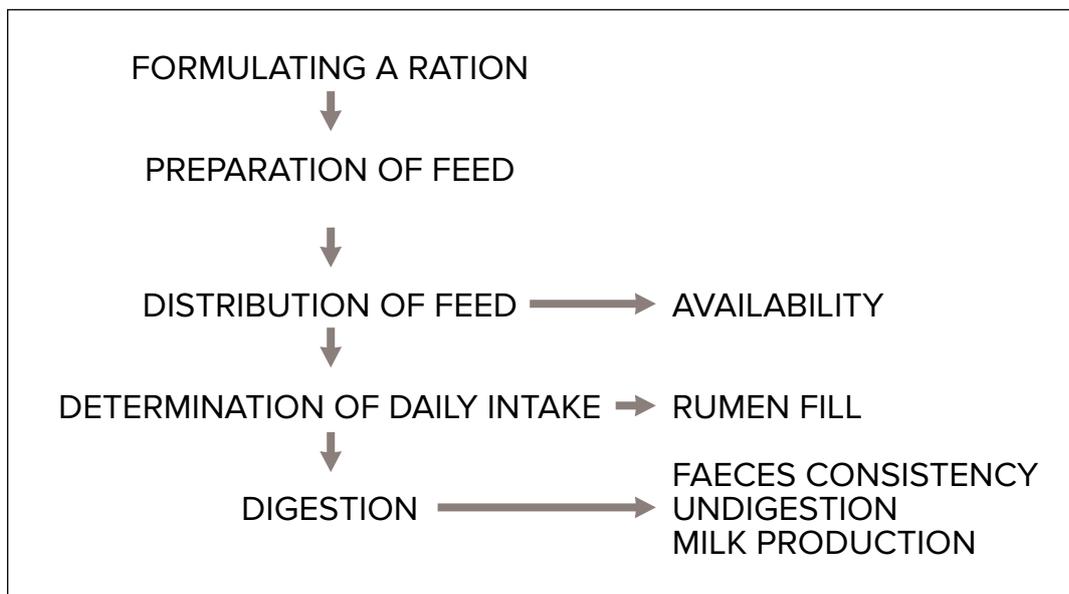


Figure 4 – Monitoring system for feeding and digestion

### 3.1 RUMEN FILL

The total passage of feedstuffs through the cow's digestive tract takes between 36 hours and four days. Using RF to determine dry matter intake will give you faster results on feed intake than BCS or milk production results.

Rumen fill is the result of dry matter intake, ration composition and digestion. It also indicates how fast the feed is passed through the rumen. The digestibility is the result of feed retention time in the rumen and the degradation characteristics of ingested nutrients.

The scoring system for RF is easy to implement as it can be seen on the cow directly. The scores go from 1 to 5, with 1 being a very empty rumen.



## RUMEN FILL

The observer should be standing at the left hind side of the cow. From here they can see the so-called paralumbar fossa between the last rib, the transverse processes and the hip bone.

### Score 1

The paralumbar fossa looks very empty. Behind the last rib more than a hand width difference is present. Also under the transverse processes the rumen is more than a hand's width lower. The fossa looks like a clear rectangle when observed from the left side. Cows that show this score, did not eat at all or clearly not enough during the last hours or even days.

### Score 2

The paralumbar fossa can still be recognised as a triangle, but there is less than one hand width difference under the transverse processes. Behind the last rib is still one hand width difference. This score is acceptable for fresh cows during the first week after calving. Make sure the RF score increases after this week.

### Score 3

The difference of the paralumbar fossa between the last rib is less than one hand's width. There is no clear triangle visible and the fossa sticks out slightly looking from the transverse processes. This score is ideal for cows in mid and high production. Feed intake is sufficient.

### Score 4

The paralumbar fossa skin is covering the area behind the last rib and bulges out thanks to an extended rumen. This score is ideal for cows in late lactation and dried off cows.

### Score 5

The rumen is completely round and fills up almost whole the paralumbar fossa. The last rib and transverse processes are not visible. This score is ideal for dried off cows.



### TIP: RUMEN FILL

The rumen fill should increase during the lactation. High producing cows digest feed faster and eat higher quantities than low producing cows.

## 3.2 FAECAL CONSISTENCY

Faeces shows the result of the balance in the ration. By judging the faeces on consistency and digestion the ratio between liquid and dry matter part can be determined.

Make sure that the faecal consistency score is only carried out using fresh faeces. The assessment of the faeces is done visually and by applying a so called 'boot test'. This test is done by stepping in the faecal pad and assessing the extent to which it sticks to your boot when withdrawing. After the withdrawal of your boot, the faeces should be assessed on undigested parts and sole profile from your boot. The ideal score for manure changes during lactation stages.

## 3.3 UNDIGESTED FRACTION

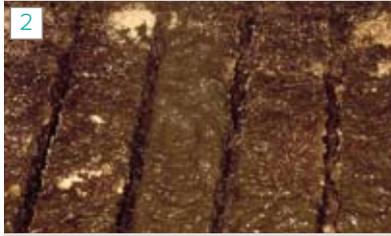
Judging digestion is done through visual observation and feeling for undigested particles. In an ideal situation all particles are digested. Often particles did not



## FAECES SCORING (1)

### Score 1

The faeces are watery thin and not recognisable as faeces immediately. Cows with infections or metabolic diseases show this sort of manure. These faeces are not acceptable.



### Score 2

Faeces are somewhat thicker than score 1. Faecal structure can be recognised. When faeces drop on the floor, they splash wide out on the floor. This faeces score might indicate poor balance in the ration or might be caused by fresh spring pasture grazing. This score is acceptable for cows in high production.



### Score 3

Faeces are thick and make a light plopping sound when they hit the floor. The faeces form a clear pad that is about 2 cm thick. This score is ideal for high producing cows. When the boot test is applied, no vacuum is present when the boot is retreated and no sole profile stays visible.



### Score 4

Faeces are very thick and stiff. A loud plopping sound is produced during defaecation. The faeces form a pad that shows rings and does not spread much. This score is not acceptable for lactating cows, for dry cows and heifers it is ideal. When applying the boot test, a vacuum can be felt during withdrawal and sole profile remains visible on the pad.



### Score 5

Faeces are even thicker than score 4 and look more like balls than faecal pads. Clear sole profile will remain on the pad after the boot test. This score is often seen among dry cows and heifers. However the ration should be changed, so faeces with score 4 will appear.

have enough time to be digested when they are seen in faeces. In that case the ratio between energy and protein in your ration should be re-assessed.

### Technique

The best way to get an impression of the degree of digestion is by washing faeces out of a sieve. From proper faeces only a small handful of undigested particles should be left. No solid particles should be found.

This score is done after the faeces are thoroughly examined on shiny or dull appearance and the structure of the faeces is felt by hand. Gloves are advised. This squeezing will determine if faeces are rough or creamy and if it is a homogenous product. Also the presence of undigested particles can already be felt through squeezing.



### TIP: FAECES

If you see solid particles in the faeces of your cow(s), the feeding ration has to be reassessed.