

TD n° 05: FOOD RATION

1. The food ration

A feed ration is a combination of foods made available to animals daily to cover their needs.

In ruminants this ration is generally divided into two meals or distributed ad libitum.

2. Method of distribution of rations

There are different ways of distributing rations. We can thus broadly distinguish between the complete ration, the semi-complete ration, the ration with individualized supplementation and the batch ration.

2.1 The complete ration

The complete ration is a simple ration distribution technique that saves the farmer considerable time. It involves pre-mixing the forages and concentrates using a mixer dispenser, then administering this mixture to the animals. Therefore, there is no need to individually supplement the concentrate. In addition to saving time, this technique has the advantage of allowing the rumen to function properly.

The feed ration is distributed according to the type of herd. For this purpose, homogeneous herds are made up of animals of the same age, the same weight and the same production; their ration is therefore collective. The distribution of the ration can be either:

- *Unique*, that is to say made up of a single food (complete food) covering exactly the total needs of the animal.
- *Composed of a collective basic ration*, covering part of the total needs and a complementary ration also collective covering the rest of these needs.

This distribution method therefore allows for the prevention of digestive and metabolic disorders. On the other hand, since the complete ration is developed taking into account an average production objective for the herd, dairy cows with high production levels tend to be underfed, while low-producing cows (producing less than 10 kg/vl/day) tend to be overfed.

2.2 The semi-complete ration

To avoid the disadvantages of the complete ration, the breeder can opt for an intermediate solution, on the one hand by reducing the energy density of the ration, and on the other hand by distributing a concentrated supplement to high-producing cows (producing more than 10kg/vl/day).

In this case, fodder and concentrates are always mixed beforehand and then distributed at the trough, but an additional individual distribution of concentrates is carried out for high producers in order to avoid overfeeding low-producing cows, but this constitutes a more significant time investment for the breeder.

In other words, this ration is distributed to "heterogeneous herds" with different production; it is a *collective basic ration*, distributed to all animals and covering "basic needs": maintenance needs and a major part of production needs

2.3 The ration with individualized supplementation

This distribution method allows for completely individualized feeding: the concentrates are in fact administered individually, according to the needs of each animal. When *the basic ration is unbalanced*, that is to say deficient in energy or nitrogenous matter.

In this case, a corrective food will rebalance it; This is a ***correbalance factor*** which constitutes ***the balanced supplementary ration***. This technique allows for adjustment of inputs to requirements, and therefore optimization of milk production, but requires considerable time and constant monitoring.

2.4 Batch ration

Batch feeding involves dividing the herd into several batches, depending on the animals' milk production and/or stage of lactation. Different rations are therefore calculated and prepared. This distribution method can be useful when calvings are spread out over time.

When *the basic ration is balanced but insufficient* to cover the total needs of the animal. In this case, a feed covering exactly the needs of its additional production will be distributed separately to each animal and in proportion to these needs; This is a *balanced production feed* which constitutes ***the supplementary production ration or additional ration***.

3. Qualities of a ration:

A dairy cow's daily ration must cover the animal's daily needs, whether it is a single or combined ration. These needs are grouped into 8 points, which correspond to the 8 qualities of the ration.

- The ration must provide energy to the body.
- It must provide him with nitrogenous materials.
- It must contain mineral matter.
- She also needs to give him vitamins.
- It must also present these substances in sufficient volume, in a "*correct footprint*".
- It must still allow the necessary watering and quality water.
- It must not contain toxic substances or provide healthy foods in proportions that make them toxic.
- Finally, it must be economical.