

Sheep ration management and physiological phase

Problem: Feeding is the item that among others has the greatest economic impact within a company (about 60% of total costs). It therefore represents a fundamental phase for achieving the objectives set by the breeder. The food ration administered to animals must necessarily take into account their nutritional needs, which vary according to the physiological stage in which they are found. The physiological phases are: growth, pregnancy, lactation and dryness. The growth phase involves the replacement animals: the lambs from birth to the first birth. Pregnancy can be divided into: early pregnancy (first 30 days), intermediate phase (the following 70 days) and the final phase (the last 50-55 days, which coincide with the dry period). Three phases are also recognized for lactation: early lactation (first 2 months), full lactation (up to mating) and late lactation (from mating to dry).

Whatever the physiological phase of the animals, for proper nutrition, the animal's needs must first be defined taking into account the live weight, environmental conditions, physical activity, and production level.

Solutions: The gradual change of diet between one physiological stage and the next is fundamental and provides balanced supplies of energy and protein, as well as adequate supplies of fiber to ensure the correct physiology of rumination. For stock replacement animals, the goal is to reach sexual maturity around the 8th -10th month of life, at a body weight equal to about 65% -70% of the future adult weight, so as to be able to arrive at a first birth around 13-15 months of life of the animal. In order to achieve this result, the ration should therefore contain the right amount of NDF (30-32%) and the right energy intake (0.7-0.8 UFL / kg of SS). Incorrect fibrous and energetic concentrations could lead to a lack of first heat in the desired time with a shift in age at the first birth.

During the entire period of pregnancy, food supplies must allow the development and survival first of the embryo and then of the fetus, animals that are too fat or too thin at delivery could present both problems with childbirth and production drops that are often irrecoverable; the optimal range of BCS at delivery should be between 3.25-3.5. As regards the lactation period, while during the first months, rations that are poor in fiber and rich in energy concentrates should be preferred in order to support the increasing milk production and avoid aggravating the physiological weight loss (max 5-6kg), subsequently, the rations should contain fodder with a high content of digestible fiber and low in cereals with a high energy content. This allows to support the production of milk during the whole phase and to allow the animal to restore the body conditions lost in the first months of lactation, without gaining excess weight. Finally, even the ration of dry food must be commensurate with the needs of the animal; in this phase, good quality hay must always be left available to the animal, while the protein and starch sources are zero. You can begin to gradually reintroduce the latter in the 2-4 weeks prior to the birth in order to start accustoming the animal to feeding the imminent start of lactation.

Practical recommendations:

- dividing the animals that are within the same physiological phase into homogeneous groups allows for better management of the same and of the ration;
- For stock replacement animals, it is therefore recommended to divide the lambs into three homogeneous groups in terms of live weight and age. The subdivision of the comeback would include animals up to 3-4 months fed on hay and concentrates, animals from 3-4 months to 10 months fed with pasture and

concentrates and the last group with animals from 10 months to first calving fed with hay, pasture and concentrate;

- also as regards the lactation phase, the subdivision into homogeneous groups according to production levels proves to be an effective technique in managing the ration of the same;

- in the choice of foods to be administered during lactation, corn and barley grains (which contain a high amount of starch) and pea or field beans (which contain a medium amount of starch) allow to meet the energy demand of the animal in the first months. In the intermediate and late lactation stages, the supply of digestible fiber can be supported by beet pulp, soy husks, citrus mash, hay or unripe, finely chopped silage and alfalfa pastures.

- preparation for calving must include an adjustment of the ration taking into account a physiological weight loss that begins about three weeks before calving. The gradual administration of energy concentrates which prepare the rumen microorganisms for the post-partum ration and contain the weight loss within physiological limits is very important.