

HEALTH MANAGEMENT OF EWES DURING THE DRY-PERIOD

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Introduction: Health management of ewes during the dry-period is important for optimum production in sheep flocks. Health management during that period should ensure that, at lambing, ewes produce large, viable lamb(s) and have milk production adequate to ensure survival of lamb(s) until weaning. This paper presents the principles of health management of ewes during the dry-period. Some differences in health management exist among various systems, i.e. dairy sheep systems or meat producing systems, which reflect the production priorities in the various systems. Some differences also exist in relation to the season of the year when the dry-period occurs, i.e., in relation, at least partly, to the geographical latitude of the farm's location. Management at end of lactation and start of dry period. At that time, the mammary glands of ewes should be clinically examined, in order to identify animals with long-standing mammary abnormalities for culling. This simple health management practice would contribute to (a) smaller costs for treating chronically infected animals, (b) reduced spread of pathogenic bacteria within the flock and (c) lower incidence of post-partum mastitis, which is a significant risk factor for increased neonatal mortality. Although, there are some reports regarding the value of intra-mammary treatment of ewes at the end of lactation ("dry-ewe" treatment), there is no detailed documentation -as much as in cows- regarding potential benefits and financial value. One may suggest that if incidence of clinical mastitis during the last milking season was high (>10%), then use of dry-off intramammary treatment may be advocated.

Pregnancy diagnosis: Pregnancy diagnosis in ewes can be performed by means of transcutaneous abdominal ultrasonography. The method can be used after the 40th day of pregnancy with an overall accuracy of >95% and after the 50th day of pregnancy with an overall accuracy of >99%. The method also allows identification of number of foetuses borne, with an overall accuracy of 90 to 95%. When one seeks only confirmation of pregnancy, 70 to 100 ewes may be examined within one hour. If identification of the number of foetuses borne, which helps to design a more robust health management program, is also required, then one needs 1 to 2 min per ewe. Confirmation of pregnancy of ewes should take place by the 70th day of gestation. Animals found "empty" should be put to rams again (if still within the breeding season); alternatively, a strategy should be decided for their mating (perhaps by using hormonal treatment) or for culling. Animals found to be pregnant should be divided into two groups according to the number of foetuses borne, i.e. ewes with a single foetus and ewes with twin/multiple foetuses.

Nutritional management. Nutritional management of pregnant ewes aims to: a) preventing development of metabolic diseases in late-pregnancy, like pregnancy toxæmia or hypocalcaemia, b) supporting the birth of lambs with right bodyweight (neither too heavy, predisposing to dystocia, nor with suboptimal weight, predisposing to neonatal mortality), c) producing adequate quantity of colostrum with appropriate quality and d) leading to increased milk yield of ewes during the forthcoming lactation. During the second and third month of pregnancy, embryos reach 15 to 25% of their birthweight. Excessive energy feeding should be avoided, in order to prevent increased intra-abdominal fat deposition, which may, subsequently, predispose animals to pregnancy toxæmia. Protein content of feeds should be >8% per dry-matter basis. Animals should have a body condition score (BCS) of 2 to 2.5 (on the five-point scale). Thereafter (4th and 5th month of pregnancy), embryos develop quickly to reach their birthweight. Nutritional demands increase progressively and become highest towards end of pregnancy. Inclusion of highly palatable feeds, with increased energy content (e.g. fat or molasses) in rations for pregnant ewes, contributes to meeting nutritional demands. Total protein content in feeds should be as high as 10% per dry-matter basis. A late-pregnant ewe may consume about 25 g of dry-matter per kg bodyweight. Animals should have a BCS of 2.5 to 3.5 (one month before expected lambing), going down up to 2 to 2.5 just before lambing.

Anthelmintic administration: Anthelmintic administration to ewes being in late pregnancy (28-21 days before the expected start of the lambing season) leads to reduced peri-parturient excretion of parasitic eggs from ewes, thus supporting growth of lambs in a clean environment. Moreover, the procedure contributes to increased birth body weight of lambs and, in some circumstances, to subsequently increased milk yield by ewes. In some systems, administration of anthelmintics in late-pregnant ewes is avoided, in which case this should be performed within the first 10 to 15 days after lambing. Anthelmintic treatment must include a nematocide drug. A trematocide drug may be administered, if animals are considered at risk for trematode infection. The primary choices for anthelmintic administration are a macrocyclic lactone or an α -aminonitrile derivative. In both cases, triclabendazole or rafoxanide can be added if trematocide action is required. A benzimidazole or pro-benzimidazole may be administered only in ewes confirmed to be over 50 days of gestation, as these drugs have a confirmed teratogenic effect; some of these drugs (e.g. albendazole, netobimin) also have a trematocide action, therefore they may have a dual effect. Finally, administration of levamisole at late stages of pregnancy has been associated with abortion, thus it better be avoided.

Vaccinations: Anti-clostridium vaccination of pregnant ewes is important for prevention of clostridial diseases in ewes (e.g., type A enterotoxaemia), as well as in newborn lambs (e.g., dysentery, tetanus). Vaccination schedules of pregnant ewes should ensure that they have a high level of circulating antibody at lambing time. Ewes have the ability to concentrate these antibodies in the colostrum and thus provide high amount of antibodies to their lambs, leading to their effective passive protection. As the clostridial toxoids contained in the respective vaccines, are inactivated, initially it requires two doses of each vaccine administered four to six weeks apart, in order to establish protective concentrations of antibodies. These wane over a period of a year, thus annual booster vaccinations are required. Ideally, booster vaccinations should be carried out in ewes about four to three weeks before the start of the lambing season. In flocks where the total lambing season extends over two months (consequently to a long mating period earlier in the season) and with a high incidence of lamb clostridial diseases, one should consider re-vaccination of ewes which would have not lambed up to eight weeks after the vaccination. In flocks where vaccinations against other diseases (e.g. orf, contagious agalactia, brucellosis etc.) should be performed, a detailed vaccination schedule should be drawn and implemented strictly. In this case, vaccinations should be performed with an interval of 21 days between each of them.

Housing: As ewes enter the last week of pregnancy, they should be transferred to clean lambing pens, in a quiet and isolated area of the farm, in order to help them achieve a normal lambing and a subsequent strong ewe-lamb bond.

Concluding remarks: The above provide general principles for health management of dry-ewes. Of course, differences exist among flocks, but the above principles may be used to establish a baseline program, upon which to built depending on individual requirements of flocks.

Key words: sheep, dry-period, vaccination, clostridium, anthelmintic treatment, pregnancy diagnosis, lambing.

References:

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