Maternal behavior of ewes of Chios and Florina (Pelagonia) breeds - differences and utilization

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Introduction

The rapid development of a close and exclusive bond between the ewe and her offsprings is the integral prerequisite to the survival and growth of lambs. Maternal behavior plays an important role in the establishment of this bond, and is influenced by numerous factors, such as genotype, previous maternal experience, temperament and others.

Objective

To detect differences in maternal behavior in ewes of two Greek indigenous breeds, Chios and Florina (Pelagonia).

Figure 1. Group pen housing Florina (Pelagonia) ewes and their lambs

Materials & Methods

Thirty-three ewes and their offsprings (50 lambs) of the Florina (Pelagonia) breed (Fig. 1) and 30 ewes and their offsprings (50 lambs) of the Chios breed (Fig. 2) were used.

All ewes were clinically healthy and managed identically. The animals were housed indoors, in group pens according to their breed and productive stage (Fig. 3), in the experimental sheep farm of the Research Institute of Animal Science.

All lambs were delivered naturally and remained in individual lambing pens with their mothers for 3 days. Maternal behavior was measured by using a 5-point scale scoring system (MBS), based on the proximity and vocalizing of the ewe to her lamb as it was handled (ear tagged and weighted) for the first time (12-24h after birth):

1. Ewe flees at the approach of the farmer, shows no interest in the lamb(s), does not emit any vocalization and does not return to the lamb(s) during the observation period.
2. Ewe retreats further than 10 m but comes back to her lamb(s) as the farmer leaves them.
3. Ewe retreats to such a distance that tag identification is difficult (5 to 10 m).
4. Ewe retreats but stays within 5 m. from the lamb(s).
5. Ewe stays close to the farmer during handling of her lambs, possibly attempting to maintain physical contact with the lamb(s).

MBS were grouped into 3 categories for each breed, poor (MBS:1-2), good (MBS:3) and excellent (MBS:4-5).

Lactation, litter size, lamb weight at birth and weaning and survival rate were also recorded and all data were analyzed using SPSS© v.24.

Figure 1. Florina (Pelagonia) breed ewe and lamb

Figure 2. Chios breed ewe and lamb

Results & Discussion

Poor MBS cases were significantly lower in Florina ewes (P≤0.001) (Fig. 4), while excellent MBS was awarded to 50% of them and only to 30% of Chios ewes.

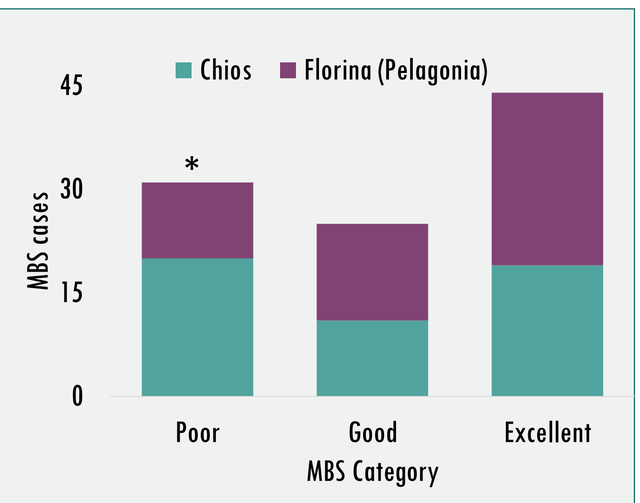


Figure 4. MBS cases per breed and category

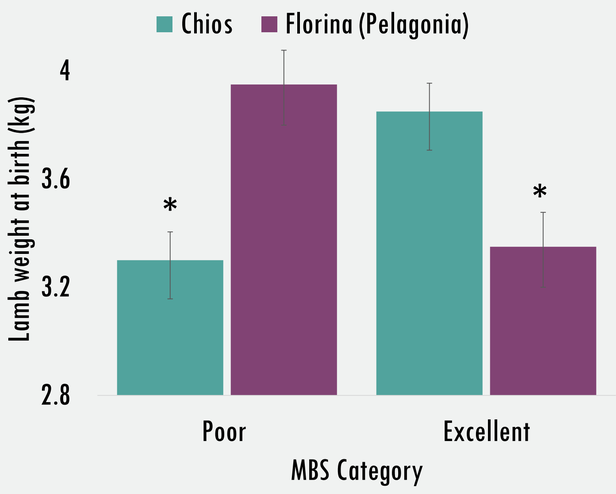
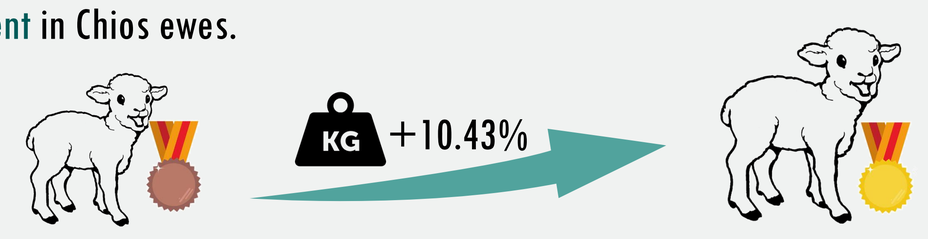


Figure 5. MBS and lamb weight at birth

Florina ewes exhibit excellent MBS when lambs' weight at birth is significantly lower than Chios lambs' (P<0.05), while the opposite was observed for poor MBS (P<0.05), (Fig. 5).

Lamb weaning weight increased by 10.43% as MBS improved from poor to excellent in Chios ewes.



Significantly younger Florina ewes achieved excellent MBS in comparison to Chios ewes (P<0.05) (Fig. 6).

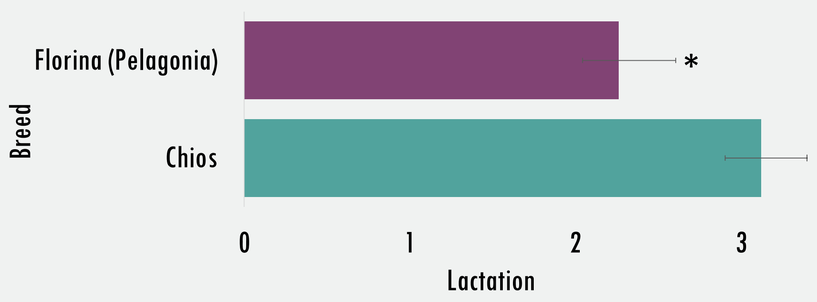


Figure 6. MBS and ewe lactation

Conclusions

Maternal behavior differs between the two breeds, with Florina (Pelagonia) ewes exhibiting desirable characteristics in a more pronounced way.

These results indicate that MBS can be utilized as an additional management tool in selection of breeding stock.