Mother-offspring behaviors during suckling in Gökçeada, Maltese and Turkish Saanen goats

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Introduction

The most important factor determining mother-offspring interaction in mammals is the breeding system. For example, while the mother and offspring are always together in natural life, the dimension of the relationship in livestock is determined by people (Dwyer and Lawrence, 2005). In this study, we determined the behaviors of mother-offspring and other individuals during suckling period in goat genotypes.

Materials and methods

The study was conducted in Gökçeada, Maltese and Turkish Saanen genotypes and their offspring, aged between 7-43 day. The goat and kid were registered with the camera during suckling for 30 minutes in the evening. In each observation, 4 goats and their kids were observed in indoor (2 x 3 x 4 m). A total of 33 observations were registered by 26 goats and offspring from each goat breed. Mother-offspring meeting times, leaves times, suckling frequency and time, frequency of acceptance or rejection, bunting, aggressive biting, nose-pushing were observed with continuous sampling method. Square root ($\sqrt{y}$) transformation was applied to the analysis data to meet the prerequisites of variance analysis. Suckling behaviors of variance analyses with a fixed model including goat breed and age of goat kid as covariant were conducted. The variance analyses of interaction behaviors were conducted with a fixed model including goat breed, individual whose behavior is directed (goat, own kid or foreign kid) and fixed interactions. Tukey test was used in post-hoc analyses.

Results

Turkish Saanen goat show more behavior of suckling and rejection than Gökçeada and Maltese goats (Figure 1). Aggressive behaviors were not significant according to goat breeds (P>0.05). The goats showed more bunting to other goats than their own kid and foreign kids (Table 1). The goats demostrated more aggressive biting to foreign kids than their own kid and other goats (P≤0.05). The goats showed more nose-pushing to their own kid or foreign kids than adult goats (P≤0.05).

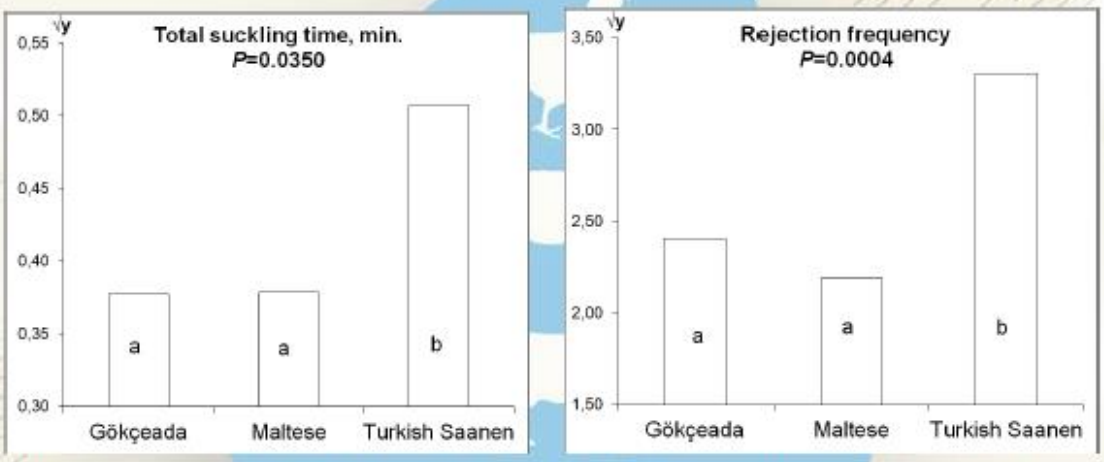


Figure 1. The behaviors of suckling and rejection during 30-min suckling periods according to goat genotypes

Table 1. Least squares means (LSM)±standard error (SE) and significant level for the goat agonistic behaviors during 30-min suckling periods

Agonistic behavior of goats	Other goat LSM±SE	Own kid LSM±SE	Foreign kid LSM±SE
Bunting	1.89±0.13^{a}	0.16±0.32^{b}	0.47±0.16^{b}
Aggressive biting	0.01±0.01^{a}	0.00±0.03^{b}	0.06±0.01^{a}
Nose-pushing	0.28±0.06^{a}	0.89±0.15^{b}	0.93±0.07^{b}

Differences between least squares mean indicated with different letters in the same line for each behavior are significant (P≤0.05).

Conclusion

Turkish Saanen differed in terms of suckling behaviors from other goat breeds. Turkish Saanen goats had more suckling of time and frequency and consequently more rejection frequencies. The goats performed the bunting behavior against goats, the aggressive biting behavior against foreign kids, and the nose-pushing behavior against their own kids and foreign kids.

References

Dwyer, C.M., Lawrence, A.B. (2005). A review of the behavioural and physiological adaptations of extensively managed breeds of sheep that favour lamb survival. Applied Animal Behaviour Science 92, 235-260.