

Abstract

Red deer males aggregate during the period of antler growth to bachelor groups. Social position – Rank – is unstable in these groups. Previous experiments revealed that rank modulated by agonistic behaviour influence the antler growth and antler cycle timing. Antlers are the secondary sexual characteristics of the deer family and one of the fastest growing tissue in vertebrate taxa. Their development is modulated by androgenic hormone, testosterone. In our experiment, we observed agonistic behaviour of 19 males. They were equipped with GPS collar and observation lasted for two hours in the evening and in the morning, once or twice a week from the end of May to the end of August. Deer were handled regularly for blood samples and downloading the telemetry data from collars. Based on a statistical analysis we found that in our bachelor group 13 stags kept similar interindividual distances which did not exceed the 22 metres level. These stags – the closest associates – differed in the sum of agonistic interactions. Those who reached 8 or less interactions were called Friends, while subgroup of the others reaching much more interactions were classified as Rivals. We found that number of interactions depended on average distance among males in groups (Friends and Rivals).

Rivals with increasing distance increased the number of interactions, while Friends did not show this trend. Average distance between stags was positively correlated with age. It seems that bachelors group of stags is composed of subgroups. Subgroup of closest associates can be divided on Friends and Rivals. Both categories kept the same distances, however Rivals tended to avoid each other. But when they did get closer they usually attacked each other.

Key words: red deer, agonistic behaviour, rank, interindividual distances, Friends, Rivals