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Oscarsborg fortress
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Development of social behaviour and importance of social relations in calves

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Calves tend to develop long-lasting social relations with peers of the same species. These relations are usually formed before 6 months of age and may last for several years. Calves reared together since birth show less aggressive behaviour towards each other than calves that get to know each other later. The aim of this master's thesis was to study the development of the social behaviour of calves and to examine whether the quality of the relationship between calves affects the behaviour of the calf in stressfull situations.

Twenty-four Ayshire dairy calves were born in the barns of MTT Finland from 2003 to 2005. After 2 weeks of rearing in single pens the calves were assigned to 6 groups of 4 animals of the same age. The 4 animals of the experimental group were reared together until 1.5 years of age (Type-1 partners). At the age of 14 weeks Type-1 calves were reassigned to a bigger group with other calves (Type-2). Type-3 partners were calves that were met later or totally unknown. The development of the social behaviour was examined. Social interactions were observed during 2 consecutive days for 12 hours at the age of 4, 7, 10 and 13 weeks. To find out whether the quality of the relation could be seen in synchrony, distance, proximity or nearest neighbour, the position and behaviour of animals at pasture and in barn were recorded every 10 minutes for 6 hours on 2 consecutive days in 4 periods. Social preferences of subjects between Type-1, -2 and -3 partners were examined in Y-maze and the calming effect of these various partners on subject calves in open-field test. Agonistic, affiliative and sexual behaviour as well as activity were observed. SPSS- and SAS-statistical programme, mixed models and Kruskal-Wallis test were used for analysis of the data.

Calves were more aggressive towards each other at the age of 13 weeks (4) than at the age of 4 weeks (1) ($p<0.05$). Sexual behaviour was more common at Week 13 than at Week 4. Partner type affected proximity values ($p<0.001$) with Type-1 partners being close to a subject calf in 15.2% of all observations whereas values for Type-2 and Type-3 partners were 12.5% and 7.9%, respectively. There was a statistical difference between all partner types in proximity values ($p\leq0.025$). Type-3 partners were butted more frequently than Type-1 partners both in Y-maze (1 vs. 0, $p=0.05$) and in open-field (9 vs. 3, $p<0.05$). Calves vocalized more when they were alone in open-field ($p<0.001$).

We concluded that the preference for peers met at two weeks of age can be seen in proximity of the calves. However, calves can form stable relations at least until the age of 14 weeks. These relations reduce aggressive behaviour, activity and frequency of vocalization, and help calves to cope with new and potentially stressful situations.