

## Behaviour of fallow deer and sheep on large unit fen pastures in north east Germany

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**Introduction** The fodder grown on fen pastures is hardly any more completely consumed by fallow deer during the vegetation period . Reasons to favour winter pastures of sheep are the reduced costs for the production of hay , the maintenance of buildings and the input of labour .

There is only small information available concerning the grazing behaviour of jointly grouped fallow deer and sheep in winter .

**Material and methods** The study of the joint keeping of fallow deer and sheep on winter pastures were carried out in a fen area near Berlin . The jointly grouped sheep and fallow deer were counted and registered by the pasture activities in the winter periods of 1999/2000 (I) and 2000/2001 (II) . There were approximately 0,5 large animal units , which corresponds to 250 kilograms of animal living mass per hectare . From November till late February , the grazing activities of sheep and the fallow deer were visually observed in a two-weeks rhythm at intervals of five minutes over the day-light periods of day . The statistical assessment of the data material was aided by SPSS software which is based on the application of a 2-factorial variance analysis (A×B-n) . correlation coefficients (Pearson) .

**Results and discussion** We found marked differences between sheep and fallow deer in different features . Sheep spend altogether much longer time for eating than fallow deer (Table 1) .

**Table 1** Ethological analyses of behaviour on winter pasture (I and II) .

Distinctive mark	X Species total (n=10)		t-Test species and year	Marginal difference correlation
	Fallow deer	Sheep		
Total ingesting time (min · d <sup>-1</sup> )	218.0	345.6 *	38.4	54.3
Mean grazing time (min · d <sup>-1</sup> )	173.7	233.8 *	60.0	84.9
Mean frequency of grazing periods (n · d <sup>-1</sup> )	2.8	3.2 *	0.78	1.10
Mean duration of hay intake (min · d <sup>-1</sup> )	44.3	111.8 *	43.6	61.7
Mean frequency of hay intake periods (n · d <sup>-1</sup> )	1.7	3.4 *	1.01	1.43

Although the animals were jointly kept in a paddock , no common ingestion rhythm developed between fallow deer and sheep , with the individuals of both species grazing mainly in their own groups . The two groups of animals usually ate hay independently of one another . While the one group was eating , the other one either rested/ruminated , or grazed . There was only one instance when rivalry development over fodder . In this case , the sheep group forced the fallow deer away from the hay racks . The animals of the two groups of species (race Skudden by sheeps) under examination are well adapted to the prevailing climatic condition ( Fischer et al . 2007) .

**Conclusions** The results obtained show that the animals maintained their species-specific ingestive behaviour despite common keeping . As compared to fallow deer , the sheep spent markedly longer time with ingestive activities . There were only rare instance of rivalry and conflict (over grazing positions or hay-feeding points) between the two species .

### Reference

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