Nutritional Value of Pasture Forage for Sheep in Krkonoše National Park

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Introduction This study describes the nutritional value of pastures in extreme mountain conditions in Krkonoše Mountains National Park. The Park performs important ecological and environmental functions. Extensive sheep grazing serves in the preservation of rare, protected and endangered species of plants (including endemics) and in the restoration of the biodiversity of meadows. The objective of this experiment was to estimate the production of plant biomass in these pastures and its digestibility by sheep.

Material and methods The experimental pasture is situated in the territory of the Krkonoše Mountains National Park (Czech Republic), at an average altitude of 1240 m (the locality of Zadní Rennerovky). The samples of biomass were taken from twelve fenced small areas (0.5 m x 0.5 m) situated in the pasture. The samples were taken twice, in the middle of the grazing period (June) and at the end of grazing (August) in the years 2001-2003. Twice during the grazing period (9 June – herbage sample A and 16 August – herbage sample B), two samples of herbage were collected in order to determine the digestibility of dry matter (DM), crude protein, ether extract, nitrogen-free extract and crude fibre in *in vivo* digestibility trials. Four mature Merino rams, weighing approximately 85 kg, were used.

Results The above-ground biomass was 5230 kg DM/ha in 2001, 5040 kg DM/ha in 2002 and 4380 kg DM/ha in 2003. The nutrient contents (g/kg DM) of herbages A and B are shown in Table 1. The digestibility coefficients of nutrients in herbages A and B are given in Table 2.

Table 1 Nutrient content of herbages A and B (g/kg DM, except for DM content, g/kg)

	Dry matter	Crude protein	Ether extract	Nitrogen-free extract	Crude fibre	Ash
Herbage A	180	217	28	439	244	72
Herbage B	425	132	23	435	346	64

Table 2 Digestibility coefficients of nutrients of herbages A and B

	Organic matter	Crude protein	Ether extract	Nitrogen-free extract	Crude fibre
Herbage A	0.627	0.680	0.495	0.638	0.566
Herbage B	0.526	0.554	0.479	0.532	0.502
Level of significance	*	**	NS	*	NS

*$P<0.05$; **$P<0.001$; NS: not significant

Conclusions The results of the experiment show a moderate nutritional value for the mountain grassland, which require to be grazed by sheep to preserve its biodiversity.

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