

## Phytosociological and economical properties of some water-meadows of Nemunas, Lithuania

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**Introduction** The water meadows of Nemunas in Lithuania have a high biological diversity as well as economic value. This paper describes the syntaxonomic type of meadow communities, plant species diversity of some water meadows of Nemunas, estimating the productivity of these grasslands in the summers of 2002 and 2003 and the optimal method of management.

**Material and methods** Four water meadows under various ecological conditions were investigated. The phytosociological analyses and identification of plant species were carried out in relation to soil type and water regime (Balevičienė *et al.*, 1998; Whittaker, 1980). Available P and K in soil chemical composition (ChC) were determined by Egner *et al.* (1960) (A-L method based on extraction with Ammonium (A) Lactate (L)).

**Results** The main four plant communities in the water meadows of Nemunas were formed on alluvial soils with different chemical composition, mechanical structure and groundwater level (Table 1). These features of ecotopes determine the management of meadows.

**Table 1** Properties of investigated water meadow communities

Plant community	Soil type	Chem.comp. at 25 cm depth			Hay yield t/ ha
		pH <sub>KCl</sub>	pH <sub>KCl</sub>	pH <sub>KCl</sub>	
<i>Arrhenatheretum elatioris</i> Br.-Bl. Ex Scherrer 1925	Medium soggy <i>Hapli-Calcaric Fluvisoil</i> ; light/ medium loam on loamy sand	8.47	15.5	14.1	3.43
<i>Arrhenatheretum elatioris</i> v. <i>Calamagrostis epigejos</i>	Light soggy <i>Hapli-Calcaric Fluvisoil</i> ; light loam on loamy sand	7.4	15.4	14.1	2.41
<i>Phalaridetum arundinacea</i> (Koch 26) Libbert 1931,	Light soggy <i>Hypogleyi-Calcaric Fluvisoil</i> ;	7.0	14.4	13.9	3.17
<i>Alopecuretum pratensis</i> Regel 1925	“	7.0	14.2	13.8	4.19
<i>Alopecuretum pratensis</i> v. <i>Bromus inermis</i>	“	7.0	14.4	14.0	4.21
<i>Deschampsietum caespitosae</i> Horvatić 1930	Strong soggy <i>Hypergleyi-Calcaric Fluvisoil</i> ; loam / loamy sand or turf	6.5-7.0	15.9	14.1	2.15
LSD <sub>05</sub>					0.11

**Conclusions** *Alopecuretum pratensis* v. *Bromus inermis* communities are the most productive, but their management is aggravated by frequent flooding. The harvesting conditions are better in drier meadows, where productive *Arrhenatheretum elatioris* communities with good feed value grow. The hay of *Phalaridetum arundinacea* and *Deschampsietum caespitosae* is of low digestibility. The management of these communities is complicated because of frequent flooding or hummocks.

### References

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