THE BENTHIC VEGETATION OF THE HEAD OF THE LIM FJORD (LIMSKI KANAL), NORTHERN ADRIATIC

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ABSTRACT

The benthic vegetation of the head of the Lim fjord, Northern Adriatic, was observed during spring and summer. Several associations, characteristic for brackish water, were recognized. Attention was payed to their floristic composition, physiognomy and biomass.

RESUMÈE

La végétation benthique de la région interieure du Lim fjord, Adriatique du Nord, a été observée sous l'áspect printanier et estivale. Plusieurs associations, charactéristiques pour l'eau saumâtre ont été établis. On a porté l'attention á leur composition floristique, á leur physiognomie et à la biomasse.

The head of the Lim fjord represents an unique habitat due to extreme shelter, soft substrata and lowered salinities. This fjord is cut into the Istrian peninsula and represents a drawned river valley. The head of the fjord is colonized by a specific vegetation, comparable to that found by the same author in inner areas of Scandinavian fjords. Some characteristic algal associations have been recognized:

1-Zosterella noltii covers shell- and sand-mud bottom in the innermost area. Ulva rigida, Chaetomorpha linum, Enteromorpha intestinalis, E.flexuousa, E.ahlneriana along with drifting Cladophora echinus and Vidalia volubilis were found within this association throughout the year, while in spring, Chaetomorpha chlorotica, Enteromorpha kylinii, E.prolifera, Cladophora fracta and Cl. glomerata joined.

The biomass of this association increased from spring towards the summer and furthermore towards next spring.

Biomass (g/m^2)	February	April	June	March
fresh weight	859	1200	1860	5600
dry weight	123	185	248	1120
salinity (‰)	8,31	19,45	7,05	11,34
temperature (^oC)	13,6	15,4	21,2	11,7

Enteromorpha ahlneriana forms an outstanding association in the same habitat. The dominat species is mainly lying in loose flocks on a sand-mud ground.Althought its is present throughout the year, it has a seasonal character, due to overlapping generations. As companion species, Cladophora fracta, Cl.glomerata, Enteromorpha prolifera, E.flexuosa, E.intestinalis, Chaetomorpha chlorotica were outstanding in spring and E.compressa, E.clathrata, Chaetomorpha linum and Ulva rigida in summer.

Biomass (g/m^2)	February	April	June	March
fresh weight	1242	3240	3160	4850
dry weight	74	275	220	340

A further prominent association found in oligohaline habitats was Enteromorpha intestinalis f.maxima. As companion species, Enteromorpha prolifera, E.clathrata, E. kylinii, E.flexuosa, E.ahlneriana and Blidingia minima were found. In summer also Chaetomorpha capillaris, Ch.linum, Ulva rigida and E.compressa were well represented. The measured salinity values in the corresponding habitat ranged from 0,85 to 19,20 ‰.

Biomass (g/m^2)	February	April	June	March
fresh weight	1298	5560	2800	6370
dry weight	103	410	235	446

An association of Porphyra leucosticta-Ulvaria oxysperma was found in spring and perished in summer. It is limited to the vicinity of submarine fresh water springs, where salinity values range between 0,9 to 7,5 ‰. Porphyra dominates this association through its abundance and large size.

Biomass (g/m^2)	February	April	June	March
fresh weight	360	580	0,0	850
dry weight	18	34	0,0	47

Ulva lactuca was recognized as a seperate association in summer with biomass values of 3600 g/m^2 fresh weight and 575 g/m^2 dry weight.