

PHYTOCOENOLOGICAL RESEARCH IN SALTY VEGETATION TO THE IERULUI PLAIN

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Abstract

Association Plantaginetum maritimae Rapaics 1927, is distributed to high salt solis in Ierului Plain. This study aims to analyze the phytocoenologic, floristic and economic points of view. Phytocoenoses association analysis present a scientific importance, by have, some species are rare, vulnerable, endemic and need to be protected.

Key words: association, phytocenoses, floristic study, life form, ecological indexes.

INTRODUCTION

From morphological point of view Ierului Plain is located in north-western Romania, the administrative territory of Satu Mare and Bihor countrys, is the lowest point of Western Plains compartments.

Ierului Plain is presented as a remarkable depression corridor with a length of 107 km and a width of 4 and 14 km from is of tectonic origin, shaped by rivers that once had considerable debits. It has an area of 1,437 square kilometers, of which 65,000 ha is the total area of the riverbed itself.

Before performing the hydrotechnics works (started in 1968), Ierului Plain had the aspect of the interior delta, dominated by hydro-hygrophilic vegetation specific, optimally of the living for a very interesting flora and fauna. After has lost technical works dones, Ierului Plain has lost the previous character, favoring the appearance halomorfe soil.

The *Plantaginetum maritimae* Rapaics 1927 association is present only in the one location from the Ierului Plain. Phytocoenosis association (Fig. 5) is installed on wet soils, which become dry in the summer time.

MATERIAL AND METHODS

To realize this study, there were performed in the 1 local incursions, and about 5 phytocoenologic sampling on natural habitat. Their size varies between 4-18 m².

The process used was phytocoenologic survey method drawn up by Braun-Blanquet.

Along with species recording, abundance and dominance (AD) were subscribed in relevées after Braun-Blanquet scale subsequently developed by Tüxen (1955) and Ellenberg (1974).

The association's synthetic table was structured after the methodology proposed by Braun-Blanquet (1964) and developed by Ellenberg (1974); therefore, in the column header of the table for the association analyzed the following have been entered: the serial number of land surveys, altitude (m.s.m.), surface (m²), coverage (%).

The following have been considered in the structure of the phytocoenologic table: illustrating or dominant species, characteristic species of the association, species for the recognition or differentiation of the sub- alliance, alliance, order, class and environmental significance.

Synthetic phytocoenologic indicex of constancy (K) whose classes are included between I-V values, that expresses the degree of coenotic fidelity compared to phytocoenoses environment of the association has been entered and calculate don the right of the table.

After Braun-Blanquet & Pavillard (1928), the medium abundance and dominance (mAD) shows percentually the average coverage realized in the association's phytocoenoses by the phytoindividuals of each recorded specie.

Differential species allowed us to set limits in the association for the taxons that are hierarchically superior to the alliance, order and class. The association's phytocoenoses are analyzed and characterized physiognomically, coenologically and ecologically.

In this respect particular attention has been given to the analysis of life forms, floristic elements and ecologic indices (UTR) through their graphical representation.

RESULTS AND DISCUSSION

In the aria study, this association have been identified in the one place: Galoşpetreu.

Floristic inventory, shows that phytocenosis community is made up of 24 plants the majority of xero-mesophile (tab. 1). Dominant and characteristic species is a *Plantago maritima*, have a general coverage of 43,5% and a maximum constant (K=V).

Along with these, in floristic composition of the association come in 15 species, whe are subordinated of *Puccinellion limosae* alliance: *Puccinellia limosa*, order *Puccinellietalia* and *Puccinellio-Salicornietea* class: *Juncus gerardi*, *Achillea setacea*, *Scorzonera cana*, *Artemisia*

santonicum. The rest of species are transgressive of *Molinio-Arrhenatheretea* class: *Lolium perenne*, *Plantago lanceolata*, *Mentha pulegium*, etc.

The spectrum of bioforms (Fig. 1), points out the preponderancy of the hemicryptophytes in the association (54,17%), followed by annual euterophytes (20,83%) and camefit (12,5%).

Fig. 1 The life forms of association *Plantaginetum maritimae* in Ierului Plain: H-Hemicryptophytes; Th-Euterophytes; Ch-Chamaephytes; TH- Hemiterophytes; G-Geophytes;

From the floral elements (Fig. 2) the preponderancy species is the eurasian (62,5%), followed by the cosmopolitans, on a par with the atlantic and circumpolar (8,33%).

Fig. 2 The spectrum of floristic elements of association *Plantaginetum maritimae* in Ierului Plain: Eua-Eurasian; Cosm-Cosmopolitan; Cp-circumpolar; E-European; P -Pontic; Atl-Atlantic; Pan-Pannonian

Analyzing the phytocenoses of the association in relation with the humidity (Fig. 3) we find that most of the species have a xeromesophilous characteristic (41,66%), followed by the mesophilous species (25,01%). Considering the temperature, the species from the association are micro-mesotherms (45,83%) and followed to moderately thermophilic (29,17%). As for the chemical reaction of the soil in the association there are dominance disputes between the euriionic (45,80%) followed by a low acid-neutrophyle (29,18%), and neutro-basophilic species (16,68%).

Fig. 3 The diagram of ecologic indices of association *Plantaginetum maritimae* in Ierului Plain where: U-humidity, T-temperature, R-the chemical reaction of the soil

In the cariologic spectrum (Fig. 4) there are, diploid (50%), followed by the polyploid (33,32 %) and diplo-polyploide species (16,68%). Diploids index has the value of 1,5.

The economic importance of the grasslands is the using by the local people for the pasturing of animals.

Fig. 4 Cariology spectrum of asociacion *Plantaginetum maritimae* in Ierului Plain: D-Diploid, P-Poliploid, DP-Diplo-poliploid



Fig. 5. *Plantaginetum maritimae*

Table 1

Plantaginetum maritimae Rapaics 1927

Bio.	E. f.	U.	T.	R.	2 n	Nr. Land Surveys	1	2	3	4	5	K ADm
						Altitude (m.s.m.)	105	105	105	105	105	
						Surface (m ²)	9	6	18	4	8	
						Coverage (%)	90	90	75	40	60	
H	Eua(M	4	0	5	D	Plantago maritima	3	5	3	2	3	V 43,50
Puccinellion												
H	Pan	3,5	0	5	P	Puccinellia limosa	+	.	.	1	.	II 1,10
Puccinellietalia, Puccinellio-Salicornietea												
G	Cp	4,5	3	5	P	Juncus gerardi	+	.	+	.	+	III 0,30
H	Eua(C)	2	3	5	D	Achillea setacea	.	+	+	.	+	III 0,30
H(TH)	P-M	2	4	1,5	D	Scorzonera cana	+	.	.	.	+	II 0,20
H(TH)	Eua	2,5	3,5	4,5	D	Cichorium intybus	.	+	+	.	.	II 0,20
Ch(H)	Eua	2,5	4	0	D	Artemisia santonicum	1	.	.	.	+	II 1,10
H	Eua(M	3,5	3	4	D	Lotus tenuis	+	.	+	.	.	II 0,20
Ch(H)	Eua(C)	2,5	4	0	D	Artemisia maritima ssp.	.	.	+	+	.	II 0,20
Th	Cosm	2,5	0	3	P	Polygonum aviculare	.	.	.	1	.	I 1
Th-	Eua	2	3,5	0	P	Lepidium ruderales	.	.	+	.	.	I 0,10
Th	Atl-	1,5	4	4,5	D	Trifolium micranthum	.	.	+	.	.	I 0,10
Th	Atl-	0	3,5	4,5	D	Bupleurum tenuissimum	+	.	.	.	.	I 0,10
TH-H	Eua(M	3	3	0	P	Inula britannica	.	+	.	.	.	I 0,10
H	Eua(C)	2	4	4	D,P	Festuca pseudovina	2	.	.	.	.	I 3,50
Molinio-Arrhenatheretea												
H	Eua(M	2,5	4	4,5	D	Lolium perenne	+	.	.	+	+	III 0,30
H	Eua	0	0	0	D	Plantago lanceolata	.	.	+	.	.	I 0,10
H	Eua(M	4	3	4	P	Mentha pulegium	.	.	+	.	.	I 0,10
Ch-H	E(C)	3	4	0	D,P	Ononis arvensis	.	.	+	.	.	I 0,10
H	Eua	0	0	0	D,P	Anthoxantum odoratum	.	.	+	.	.	I 0,10
H	Cp	3	3	0	P	Prunella vulgaris	.	.	+	.	.	I 0,10
H	Eua(M	3	0	0	P	Taraxacum officinale	.	+	.	.	.	I 0,10
Însoțitoare												
G(H)	Cosm	2	3,5	0	D,P	Cynodon dactylon	+	.	+	+	+	IV 0,40
Th-	Eur(M	1,5	3,5	0	D	Lactuca serriola	+	I 0,10

Studied places: 1-5. Loc. Galoșpetreu (01.08.2009);

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