

ECOLOGICAL AND AGRONOMIC VALUE OF TYPE OF *BOTRIOCHLOA ISCHAEMUM* GRASSLANDS

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Abstract

In Romania the meadows of Botriochloaischaemum are the most widespread type of degraded meadows as the effect of abusively grazing , unreasonable grazing and soil erosion. These are formed by the degradation of the grasslands of Festucavalesiaca and Festucarupicola. Botriochloaischaemum is an oligotrophic species, xerophyte, with wide ecological amplitude being found in either event the steppe and the area nemoral. Therefore, we studied the influence of ecological and anthropogenic factors on the floristic composition and pastoral value of the Botriochloaischaemum grasslands in the Pădurea Craiului Mountains (Bratca - Damis).

Keywords: grassland, pasture, meadow, ecological, anthropogenic factors

INTRODUCTION

The grasslands of Botriochloaischaemum are installed on the sunny ribs, south-eastern, south-western, moderate to severely eroded, southern exposition. The *Botriochloaischaemum* dominated vegetation is a good fixators eroding soil. The phytocoenosis of this association is installed on small surfaces, forming small clusters in degraded meadows, source rock on the surfaces with sunny exposition and low inclination, with a 65-70% coverage. Floristic composition of the pastures is the result of the action practical of factors applied stational and the management. The interaction between the orographic factors, climatic and soil factors caused a great diversity of the type of meadows of our country (Braun-Blanquet, 1928; Borza and Boșcaiu., 1965; Moga and Schitea, 2000; Marușca T., 2001; Păcurar et al., 2016).

The floristic composition of studied phytocoenosis is relatively poor, with a small number of species, largely of no fodder value, compared to Festucavalesiaca and Festucarupicola grasslands. Poor participation of species in the floristic composition demonstrates that it is ecologically the minimum. Also this species can be interpreted as a bioindicator for the intensity of ecological factors and the management. Based on analysis of the influence environmental, agronomic and anthropogenic, can establish the natural ecosystem praticol at a time , including how to maintain and use.

MATERIAL AND METHOD

According to Koppen's classification, the studied area is located in the Dfbx region, which is characterized by a boreal climate with cold winters, stable winter snow and forests, sufficient rainfall throughout the year and average temperatures below 22 °C in the warmest month of the year, but at least four months it does not exceed 10 °C, the maximum rainfall at the beginning of the summer (June – 340mm), the minimum to the end of winter (February - 160mm). The average annual air temperature is between 8-10 ° C, the average temperature for the vegetation period is 13.7 ° C. The first day of frost varies between 11.X and 20.X, and the last day of frost between 11.IV and 20.IV. Average atmospheric precipitation during vegetation 720 mm, annual average 1150 mm. The specific conditions in the study territory, and in particular the substrate, inclination and abundant precipitation, resulted in the formation of cambisols such as the eumezobasic soils, typical acidic and lithic soils, as well as clay-alluvial and molisols. The soils are generally skeletal, but the generally mineral-rich substrate greatly compensates for the smaller edafic volume.

Quantitative assessment of the participation of each species in the description of associations was using the the index of abundance – dominance after Braun-Blanquet scale (1928) and adapted by Borza and Boşcaiu (1965) to the features of the vegetation cover in our country.

RESULTS AND DISSCUSIONS

In Phytocoenosis of the type of greensward *Botriochloaischaemum* are present Poaceae 62%, 6% Fabaceae and 32% plants from other botanical families.

Table 1

Scale assessment of abundance and dominance modified three subnote three subintervals of Păcurar and Rotar (2014)

Note	Interval coverage(%)	The central value of the class (%)	Under note	Under-interval	Central values adjusted sub-interval
5	75-100	87,5	5c	92-100	96
			5b	83-92	87,5
			5a	75-83	79
4	50-75	62,5	4c	67-75	71
			4b	58-67	62,5
			4a	50-58	54
3	25-50	37,5	3c	42-50	46
			3b	33-42	37,5
			3a	25-33	29
2	10-25	17,5	2c	20-25	22,25
			2b	12-20	17,5
			2a	10-15	12,5
1	1-10	5	1c	6-10	8
			1b	4-6	5
			1a	1-4	2,5
+	0,1-1	0,5	-	-	0,5

Table 2

Floristic composition of type of grassland *Botriochloaischaemum* and specific requirement on ecological, agronomic and anthropogenic

Species	%	Ecological indexes					Agronomical indexes					Anthropogenic indexes	
		B	T	U	R	N	C	P	S	VF	SO	H	UR
POACEAE		B	T	U	R	N	C	P	S	VF	SO	H	UR
<i>Botriochloaischaemum</i>	39	H	5	1.5	3	3	7	8	8	0	n	2-3	3
<i>Festucavalesiaca</i>	5	H	7	2	8	2	7	8	8	4	n	2-3	2
<i>Festucarupicola</i>	11	H	5	1.5	4	2	7	7	4	4	n	2-3	2
<i>Poa compressa</i>	7	H	3	1.5	0	2	6	7	7	6	n	2-3	3
	62												
FABACEAE		B	T	U	R	N	C	P	S	VF	SO	H	UR
<i>Trifolium alpestre</i>	1	H	3	2.5	4	3	6	4	4	7	n	3-4	3
<i>Medicago lupulina</i>	2.5	Th	3	2.5	4	3	7	6	4	8	n	3-4	3
<i>Lotus corniculatus</i>	2.5	HT	0	4	7	4	6	4	4	7	n	2-4	3
	6												
CYPERACEAE- JUNCACEAE	0	-	-	-	-	-	-	-	-	-	-	-	-
<i>Achillea millefolium</i>	3.5	H	0	4	0	5	7	4	5	6	n	2-4	3
<i>Plantagolanceolata</i>	2.5	HR	0	0	0	0	7	6	6	6	n	2-4	3
<i>Veronica prostrata</i>	1.5	CH	4	2	3	6	7	6	6	4	n	2-3	2
<i>Sanguisorba minor</i>	1.2	H	6	4	8	3	6	4	6	2	n	3-4	2
<i>Pimpinella saxifraga</i>	1.5	H	0	3	0	2	7	4	6	1	n	3-4	3
<i>Echium vulgare</i>	2.5	TH	3	2	4	4	6	3	7	1	n	3-5	3
<i>Carlina vulgaris</i>	0.5	TH-H	3	2	4	3	0	0	3	2	n	2-4	2
<i>Gallium mollugo</i>	1.5	H	3	3	3	3	5	4	4	2	n	2-3	2
<i>Potentilla cinerea</i>	1.5	H	3.5	2	4	0	5	4	4	1	n	2-3	2
<i>Cirsium vulgare</i>	3.5	TH	3	3	0	2	3	8	3	2	n	2-3	3
<i>Salvia verticillata</i>	1.5	H	4	2	0	4	6	2	6	2	N	2-3	2
<i>Euphorbia cyparissias</i>	3.5	H-G	3	2	4	8	3	2	7	1	N	2-3	2
<i>Thymus maroccanus</i>	1.5	CH	3.5	1.5	4	3	4	4	4	4	n	2-3	2
<i>Teucrium chamaedrys</i>	0.5	CH	4	2	4	6	3	4	4	4	n	2-3	2
<i>Linum catharticum</i>	0.5	Th-H	2	3	4	0	6	6	6	5	n	2-3	3
<i>Hypericum perforatum</i>	1.3	H	3	2	4	0	3	4	4	1	n	2-3	2
<i>Asperulacynanchica</i>	0.5	CHR	0	4	0	5	7	4	5	6	n	2-4	3
<i>Calamintha acinos</i>	0.5	Th-H	3.5	1.5	4	2	6	4	6	1	n	3-4	2
<i>Helianthus hirsutus</i>	0.5	Ch/H	3	2.5	4	3	6	4	6	2	n	2-3	2
<i>Rosa canina</i>	2.5	Ph	3	2	3	0	0	0	0	3	n	2-3	2
	32												

(B – Bioform, T- Temperature, U-Humidity, R-Soil Reaction, N-Nutrition, C-Tolerance of mowing, P-Tolerance of grazing, S-Tolerance of crushed, VF-Fodder value, H-Hemerobie, UR-Urbanophile, SO-Sozological category)

From ecological point of view phytocoenosis are of xeromezophil (62.5%), weakly neutrophilic acid, bioforms are dominated by hemipterofites and camephites. Grassland ecological character and the spectrum agronomic phytocoenosis is similar of the type *Festucarupicola* Heuff. (Pacurar et. al. 2016). Fodder value of type (VFP=3.83) type falls within was class III, class and supports average grassland is 0.4 – 0.5 UVM/ha. From agronomic point of view the type in the phytocoenosis two species are present toxic *Euphorbia cyparissias*, *Hypericum perforatum* coverage cumulative 4.8% (Braun-Blanquet and

Pavillard,192; Timirgaziu C., 1984; Moga et al, 1996; Marușca T., 2001; Păcurar et al., 2016)

CONCLUSIONS

Botriochloaischaemumphytocoenoses have a poor productivity, being practically removed from the economic circuit. Their share in the studied area is limited, but the dynamics of the existing vegetal carpet is influenced by the andropozoogenic impact to degradation. After floristic composition determinations and statistical processing has resulted in a grassland supporting a cargo of animals 0.4-0.5 UVM/ha, with a great diversity of species (27 plant species).

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