

## PRELIMINARY OBSERVATIONS ON THE FLORA AND VEGETATION GRASSLANDS FROM RDCSEC PERIENI (VASLUI)

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### Abstract

The extent of investigation flora and phytocenologic undertaken so far allowed to cover almost all of the national territory and also initiate programs of many great scientific and economic. In this context, this paper presents some preliminary issues concerning the study of the vegetation in the hills Tutovei, specifically in the RDCSEC Perieni, Vaslui. The flora of this region is quite rich because of the variation of the relief, altitude pedological substrate, as well as climatic factors, which by their uniformity influence the distribution of species in space and time, grouping floral elements with different origin in a so small. Inventory species occurred during the growing season of 2013, Exhibit a meadow west on eroded land, used by grazing on an altitude range between 0-150m. The determination was made on the itinerary floristic default to cover the whole variability of physical and geographical conditions. For each species inventoried was analyzed as biological, environmental and economic proposed by Kovacs J.A., 1979.

**Key words:** vegetation, grassland, bio-ecological and economic indicators

Although today much more important to the past, grasslands undergo experiments to develop improvement measures, as happens at the RDCSEC Perieni. Most of these grasslands are located on land especially, the weakest and eroded shores, being a subject for excessive grazing, their vegetation is highly degraded and low yields of 4-5 t ha<sup>-1</sup> green mass (Vîntu V. et al., 2004).

For increasing the productivity of these grasslands is an urgent need to improve some

measures (Melut L.C., 2012). Since the hills are relatively harsh climatic conditions Tutovei for herbaceous vegetation growth, action and conversion of grassland restoration, in order to raise their productivity, must first be documented and scientifically proven by studies geobotanic stationary on vegetation dynamics and structure (Pușcaru Ev-Soroceanu., et al., 1960).

### MATERIAL AND METHOD

Flora and vegetation of the RDCSEC Perieni was investigated correlated with environmental factors that influence directly or indirectly on their physiognomy.

Species inventory held at the beginning of the growing season of 2013, in may, on a meadow eroded, with altitudes between 114 and 150m. The determination was made on the itinerary, performing a total of 19 readings on area of 0,8 ha, covering the whole variability of physical and geographical conditions.

For each species inventoried indicated as biological, ecological and economical proposed by Kovacs J.A., 1979, and schemes were made for each spectrum of forms.

### RESULTS AND DISCUSSION

Flora and vegetation of the RDCSEC Perieni presents a considerable wealth due landforms, altitude, pedological substrate, and some climatic factors, which by their uniformity influences on the distribution of species in space and time, bringing together elements of different origin in floristic a frame so small (Turenschi E., 1966).

From a climate perspective Perieni RDCSEC territory and its surroundings within the continental climate type with shades of excessively, characterized by very cold winters and hot, dry summers (*figure 1*).

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The essential characteristic of the climate is the small amount of rainfall around 450 mm, below the national average.

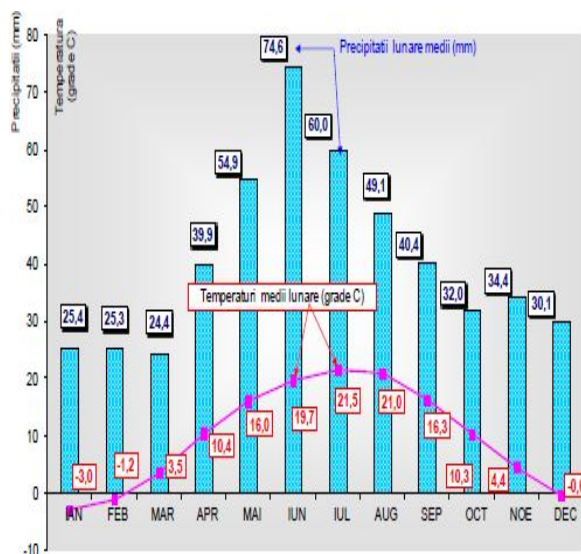


Figure 1. Average monthly precipitation and temperature during 1941-2012 at RDCSEC Perieni

The RDCSEC Perienni are soils with the potential for fertility. These are the preluvisols and alluviosols in class Luvisols, Protisols respectively.

The area is occupied predominantly forested steppe grassland. In the forest there are only a few small areas occupied by *Crysopogon etum grylli* on gray forest soils. The loose sand is rare, *Plantaginetum indication*. Most are affected so advanced soil degradation and ruderalised processes affecting the floristic composition and structure of these grasslands (N. Popa et al., 2005).

About 86% are worthless forage species, toxic or harmful and only 14% are good or feed medium, indicating an advanced stage of degradation (Ionel A., 2003; Chifu T. et al., 2006). The widespread of regional associations is *Taraxaco serrotinae-Botriochloetum ischaemi*, poor nutritional value and productivity that after this, the frequency is *Artemisio austriacae-Poëtum bulbosae*, meadows at an advanced stage of degradation (Niacșu L., 2006).

All these types of grassland - grassland exclusively - very eroded slopes dealing with numerous slides or mesh marls or clays loess horizons of which were completely eroded solified (Nistor D. et al., 1996) overgrazing, ironing intensive absence of any maintenance measures have worsened the condition of pastures, often come at the lower productivity.

In territory investigated a relatively small area found a number of 115 species, of which the structure was dominated phytocoenoses usually

*Dichanthium ischaemum* species. The floristic structure of grasslands dominated by yellow bluestem, most species (79%) are categorized as "different", while grasses and legumes values totaling 14.55% and 6.45%. In terms of species abundance and frequency of field grasses dominate (79%), followed by several species (12%) and vegetables (9%). It follows that the region is rich in grasses and legumes suitable for breeding, but the abundance of species of other families, who often are harmful or toxic plant species, cause a low forage value of grasslands.

### Spectrum of biological forms

By a distribution of grassland species on biological forms there is a net dominance Hemicryptophytes occupying 56.1% of the total bioforms and with Geophytes (9%) and Chamaephytes (2.4%) is the vegetation ensuring while the sustainability of these bioforms stability (table 1)

Therophyte high percentage, 24.1% of whom are weeds, occurs as a result of the action of antropozoogens factors.

Table 1

#### Statistics of biological forms

No. crt	Biological forms	Symb.	No. of species	%
1	<i>Hemicryptophytes</i>	H	56	56,1
2	<i>Therophytes</i>	Th	24	24,1
3	<i>Geophytes</i>	G	9	9
4	<i>Chamaephytes</i>	Ch	2	2,4
5	<i>Macrophanerophytes</i>	Mph	3	3,4
6	<i>Nanophanerophytes</i>	Nph	2	2,1
7	<i>Hydrohelophytes</i>	HH	3	2,8
8	<i>Epiphytes</i>	Ep	1	0,1

### Spectrum of phytogeographic elements

Spread across groups phytogeographic elements, 115 species are listed in table 2.

European and continental elements are the most grouping, represented 30 species, 33.88%, of which the most important for the region are: *Serratula tinctoria*, *Hieracium echioides*, *Erysimum hieraciifolium*, etc..

Noteworthy is the presence of species triticeum *Agropyron Gaertn.*, Range is *Ponte Alisma lanceolatum* species of marsh species.

In the region studied, we identified several rare species for the flora of Romania, such as: *Agropyron triticeum*, *Alyssum hirsutum*, *Trigonella monspeliaca* L., *Bupleurum apiculatum*, *Polygala sibirica*, etc.

Table 2

**Statistics of phytogeographic forms**

Groups of components	Phytogeographical elements	Species		% on group
		Nr	%	
European	European	10	8,69	16,51
	European central	9	7,82	
Eurasian	Eurasian	43	37,4	37,4
Circumpolar	Circumpolar	6	5,21	5,21
Continental	Continental	9	7,82	17,37
	Pontic	6	5,21	
	Mediterranean - pontic	5	4,34	
Mediterranean	Mediterranean	9	7,82	7,82
Balkan	Balkan	3	2,60	2,60
Cosmopolite	Cosmopolite	8	6,95	6,95
Endemism	Endemism	5	6,34	6,34
Advent	Advent	2	1,73	1,73

**Species distribution as moisture and soil moisture regime**

The RDCSEC Perieni being crossed by many narrow valleys and high, more or less wet and covered largely by grazing creates conditions conducive to the development of mesophilic flora, especially in the northern part of the territory studied. By the phenomenon of steppe in magnitude, due to human intervention, but especially deforestation, elements xerophyte increasingly conquering more land.

Species distribution after preferences moisture regime is:

1. Xerophyte = 30 species = 26.3%
2. Mesophilic = 78 species = 68.5%
3. Hydrophilic = 5 species = 3.8%
4. Hydrophilic = 2 species = 1.4%.

The distribution system of soil moisture and the ratio of the species is as follows:

1. on very dry soils = 8 species = 6.95%
2. on dry soils = 38 species = 33.04%
3. on the soil moderately moist, damp = 39 species = 33.91%.
4. on moist soils moist (not dry) = 16 species = 13.91%.
5. on wet soils (often nearesitie) = 12 species = 10.43%
6. on flooded soils = 2 species = 1.73.

**Spectrum of economical elements**

Some plant species are found potentially feed plants 75.65% are mediocre or poor forage value. This indicates that grasslands are of poor forage value, requiring the application of a set of measures for improvement. Species distribution by specific indicilui quality value is:

1. IS<sub>5</sub> = excellent = 3 species = 2.60%
2. IS<sub>4</sub> = very good = 8 species = 6.95%
3. IS<sub>3</sub> = good = 9 species = 7.82%
4. IS<sub>2</sub> = medium = 8 species = 6.95%

5. IS<sub>1</sub> = poor = 41 species = 35.65%

6. X = no value = 46 species = 40.0%.

Of the 115 species identified within the investigated species are honey 3%, while 8% are species of medicinal and aromatic plants, and the remaining 89% are fodder plant species (81%) and grassland weeds (weeds, woody plants, etc. - 8%).

Turenschi E., 1966, state that, in the flora of the Tutova Hills, 320 are comprised of a number of species, medicinal, in which 30% of the existing species with relatively high frequency but with a relatively low dominance. Most of them are spread through meadows, forests and meadows in valleys and less by grazing or ruderal.

In the study area we identified approx. 8% medicinal plants (9 species) of which the most important are *Achillea Setacea*, *Adonis vernalis*, *Althaea officinalis*, *Genista tinctoria*, *Melilotus officinalis*, *Valeriana officinalis*.

The studied region is characterized by the lack of a bee; species of clover, alfalfa, buckwheat, phacelia, sainfoin are the honey of grassland flora is not frequent.

**CONCLUSIONS**

In terms of territory belonging to the studied flora Tutova Hills, subunit Moldavian Plateau. The grasslands of the RDCSEC Perieni identified a number of 115 species, all current botanical literature cited.

In the spectrum of biological forms there is a net dominance Hemicryptophytes occupying 56.1% of the total bioforms and with Geophytes (9%) and Chamephytes (2.4%) is the vegetation while ensuring the stability of the sustainability of these bioforms.

In terms of phytogeographic elements are the European and Continental are grouped represented 30 species, 33.88%, which the most important for the region are: *Serratula tinctoria*, *Hieracium echinoides*, *Erysimum hieraciifolium*, etc..

Noteworthy is the presence of species *Agropyron triticeum* Gaertn. – natives from pontic area; *Alisma lanceolatum* species of marsh.

The most numerous species are evaluated according to their moisture mesophilic (78 species, 68.5%), followed by xerophytes (30 species, 26.3%). It is worth mentioning that Xerophyte species are the dominant land they occupy sloping strongly eroded by landslides, with poor vegetation cover which greatly reduces grazing area. Poor quality grassland with low productivity, the dominant species being *Dichanthium ischaemum* L. Roberty.

Some plant species are found potentially feed plants worth 75.65% are mediocre or even poor and worthless fodder. This indicates that grasslands are of poor forage value, requiring the application of a set of measures for improvement.

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