ASPECTS CONCERNING THE PRESENT STATE OF A GRASSLAND OF *LOLLIUM PERENNE* L. AND *TRIFOLIUM REPENS* L. AROUND FARDEA (TIMIS COUNTY)

ASPECTE PRIVIND SITUAȚIA ACTUAIĂ A UNEI PAJIŞTI DE *LOLIUM PERENNE L.* SI *TRIFOLIUM REPENS* L DIN AREALUL LOCALITĂȚII FARDEA

IOANA LOREDANA TOMODAN, ALEXANDRU MOISUC, CARMEN DURĂU

Agricultural and Veterinary University of the Banat, Timişoara, Romania

***Abstract**: In this paper we present a study of the present state of a grassland of Lollium perenne L. and Trifolium repens L. The vegetation was inventoried with the help of the double meter by establishing the bio-form and geo-element for each species participant in the analysed vegetal cover. As a conclusion, we can say that Poaceae and Asteraceae are the most numerous, hemi-cryptophyta represent 62%, followed by terophyta; bioform analysis shows that the most numerous species are Euro-Asian ones (22.5%).*

***Rezumat:** Lucraea de față reprezintă unstudiu asupra sitației actuale a unei pajişti de Lollium perenne L. şi Trifolium repens L. Inventarierea vegetației s-a făcut cu ajutorul metodei dublului metru stabilindu-se bioforma şi geoelementul pentru fiecare specie participantă in covorul vegetal analizat. In concluzie putem spune că Poaceaele si Asteraceaele sunt cele mai numeroase, hemicriptofitele se gasesc in proporție de 62,% urmate de terofite iar din analiza bioformei reiese că cele mai numeroase sunt speciile eurasiatice 22,5%*

***Key words**: permanent grassland, bioform, geo-element*
***Cuvinte cheie:** pajişte permanentă, bioformă, geoelement.*

INTRODUCTION

According to ȚUCRA et al.(1987), grasslands of *Lollium perenne* L. and *Trifolium repens* L. are part of the nemoral area, the sub-area of sub-mesophilous thermophilous, series *Festuca valesiaca-Festuca rupicola*, sub-type *Lollium perenne* L.

In general, phyto-coenoses edified by *Lollium perenne* L. and *Trifolium repens* L. are high quality grasslands and are spread over the superior terraces of the rivers, in hill areas with plateaus and smooth slopes, often close to localities on alluvial eutrophic soils (COSTE *et al*., 2001).

MATERIAL AND METHOD

The study was carried out in the Surduc Hill area. The Surduc Hills are located at the foot of the Poiana Ruscă Mountains, and are limited east by the Bega-Luncani rivulet, north by the terraces of the Bega River.

The southern limit, towards Poiana Ruscă, follows the alignment of the localities Crivina, Hăuzeşti, Gladna, Zolț, Tomeşti; the limit is formed by the valley of the Saşa River, up to Crivina de Sus. The contact with the mountain is through a strongly bumped area and through a series of contact depressions.

Observations were made in the year 2007 on a grassland of *Lollium perenne* L. and *Trifolium repens* L. The permanent grassland analysed is located in the near vicinity of Fărdea, at an altitude of 160 m.

Vegetation was determined through the double meter method (DAGET & POSSONET, 1977).

The bioform and geo-element were attributed for each species in accordance with what SANDA *et al*. (1983) established.

RESULTS AND DISCUSSION

Analysing the general covering by vegetation, we could see it represents 90%, with *Lolium perenne* covering 13% and *Trifolium repens* covering 10%.

The graminaceae cover determines the physiognomy of the association and also achieves a good recovery of the land. This graminaceae cover is represented besides edifying species also by such species as: *Festuca pratensis* L., *Bormus erectus* Huds., *Poa pratensis* L ., *Agrostis capillaris* L.

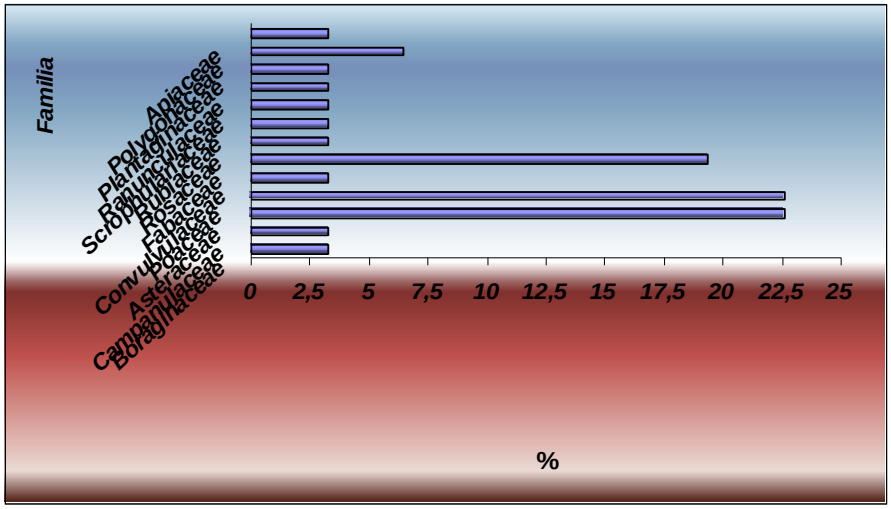

Fig. 1. Structure per botanical families of species of the *Lolium perenne* L. and *Trifolium repens* L. grassland

Over this cover, there is another layer made up of less species and eaten by animals, such as: *Achilea millefolium* L., *Daucus carota* L., *Cichorium inthybus* L. as well as species avoided by animals, such as: *Rumex acatosa* L., *Ononis hircina* Jacq., *Crepis bienis* L., *Dorycnum pentahylum* L.

The species that constantly appear beside *Lollium perenne* L. and *Trifolium repens* L. are present in all the three points where we made vegetation determinations: *Plantago lanceolata* L., *Crepis bienis* L, *Achilea millefolium* L., *Daucus carota* L., *Cichorium inthybus* L., *Taraxacum officinale* Weber, *Ranunculus repens* L. which was also noted by DURĂU (2006) in a grassland of *Lolium perenne* L. and *Trifolium repens* L.

Grouping the plant species per families and expressing them as shares of the total number of species determined (31 species) it resulted that *Asteraceae* and *Poaceae* have the highest share, i.e. 22 .5% (7 species per family), followed by legumes 19.5% (6 species) (Figure 1).

Polygonaceae present belong to the species *Polygonum aviculare* L. and *Rumex acetosa* L. and share 6.23% (Figure 1). All the rest of botanical families are represented by one or two species, sharing 3.25% each (Figure 1).

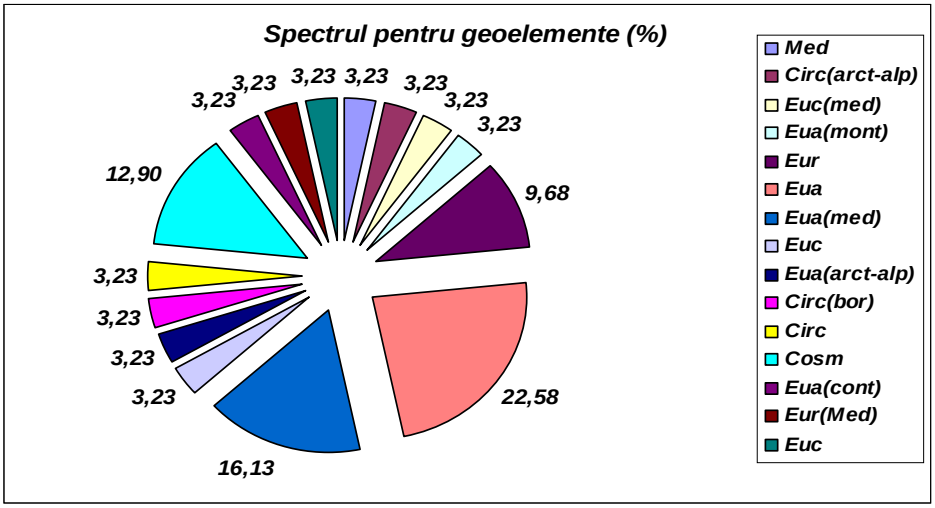

Fig. 2. Bioform spectrum

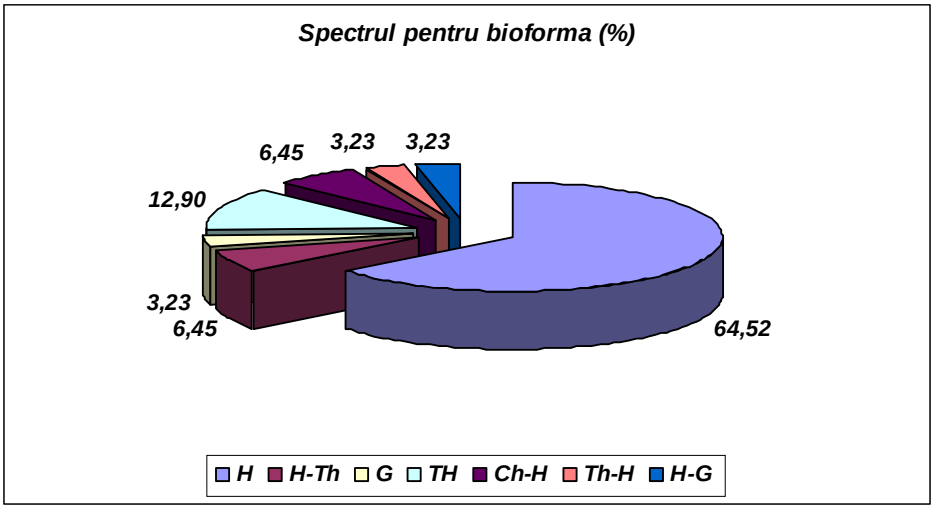

Fig. 3. Geo-elements spectrum

Analysing the bioform spectrum, we can se that hemi-cryptophyta such as *Agrostis capillaris* L., *Bromus erectus* Huds., *Carduus acanthoides* L., *Ranunculus repens* L., *Lolium perenne* L., are dominant 64% (20 species), followed by terophyta 12.5% (4 species) and cryptophyta and hemi-cryptophyta 6.45% (2 species) (Figure 2).

Among geo-elements, the most numerous are Euro-Asian species (22.58%), followed by Euro-Asian – Mediterranean species (16.13%) and cosmopolitan species (12.9%) (Figure 3).

European species share 9.68%, almost half of the percentage of cosmopolitan species.

We can see a trend to ruderalisation due to such cosmopolitan species such as *Polygonum aviculare* L. and *Rumex acetosa* L., *Convulvulus arvensis* L., *Potentilla reptans* L., and of terophyta species such as *Verbascum phlomides* L., *Carduus acanthoides* L.

CONCLUSIONS

The distribution of the species per botanical families shows that Poaceae and Asteraceae are the most numerous species.

Hemi-cryptophyta share 62%, followed by terophyta.

The most numerous species are Euro-Asian ones (22.5%).

BIBLIOGRAPHY

1. COSTE, I. *et al.*, 2001- Ecologie generală şi agricolă, Editura Orizonturi Universitare, Timişoara.;
2. SANDA, V. *et a.*,1983 –Caracterizarea ecologică şi fitocenologică a specilor spontane din flora Romaniei, Studii şi comunicări 25, supliment Stiinţe naturale;
3. ŢURCA, I. et.al.,1987- Principalele tipuri de pajişti din R.S. România, Centrul de Material Didactic şi Propagandă Agricolă, Bucureşti;