

**MAIN MEADOWS SUBCARPATHIANS IALOMIȚA**

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**Abstract**

Grassland vegetation is relatively rich and varied. Due to the rugged hills orographic heights and various exhibitions and large territories uncontrolled deforestation in the hilly area is made very different microclimatic conditions, especially on sunny slopes where grass steppe vegetation penetrates easily be accounted for grassland steppe, close to the steppe or steppe grasslands.

Keywords: grasslands, microclimatic conditions, productivity

**1. INTRODUCTION**

The Ialomița Subcarpathians area are limited to the west of Dâmbovița, Prahova valley and east. In the north are massive Leaota and Bucegi mountains, and in the southern Romanian Plain.

It occupies an area of 32,095 ha. Between Crew and Ialomița Leaota transition from mountains to hills is almost imperceptibly, a pronounced bump appeared only between 900 and 1000 m altitude, between Prahova and Ialomița, crossing the hills Bezdead Bucegi and yours is marked by more pronounced relief stage, which takes place between approximately 1100 and 950 m altitude.

Between and Prahova transition to hilly piedmont plain is via a platform formed by a piedmont area, which appears in the landscape.

**2. MATERIAL AND METHOD**

To achieve the research objectives were investigated in the area Subcarpathians Ialomița routing.

During the field trips were conducted floristic surveys. There were forage species but also use honey, the stationary conditions for each mapping, plant phenological phase identified, flower color, height of vegetation and other ecological and biological characteristics.

It was also noted maintenance condition of grasslands investigated, works to improve the system applied in the determination, as in previous years.

**3. RESULTS AND DISCUSSIONS**

On permanent grassland of Ialomița Subcarpathians area was identified three types of grassland area:

*Festuca valesiaca* - *Dichanthium ischaemum* with different species and mezoxerofile xerophyte with pronounced steppe corresponding low hills, still strongly influenced by climate steppe, *Agrostis capillaris* mesophilic character mezoxerofil on flat surfaces or on land sloping from the highest hills, meadows of *Festuca rubra* in high hills on the border with mountainous terrain.

**1. *Festuca valesiaca* grasslands and *Dichanthium ischaemum***

**1.1. *Festuca valesiaca* and *Dichanthium ischaemum*, with various species**

Grasslands on the plateaus and low hills at the foot of the mountains and sunny in most of them are grass steppe with *Festuca valesiaca*, *Festuca pseudovina* and *Dichanthium ischaemum* in combination with many elements of the steppe and forest steppe, thus constituting a group types of grassland steppe hills, oak forest floor proper, oak and beech hill. Meadows that grow in the area of these forests have a similar floristic composition of the steppe grasslands, being an extension of them, due to human intervention. It is pointed out that edifying of steppe grasses, the dry grasslands and low hills *Festuca valesiaca* more prevalent, and the hills higher, cooler climates prevail *Festuca rupicola*, and grass species that builds up the grasslands of ribs.

In this area, on dry slopes and degraded, is *Dichanthium ischaemum* and *Poa bulbosa*, which invades degraded pastures of *Festuca valesiaca* forming subtypes derived highly xerophyte. Production is low, ranging between 0.5 and 1.5 t / ha DM medium quality.

**1.2. *Festuca valesiaca* + various species mezoxerofiles**

It is the most representative and most common type of low hills and grassland.

Grasslands are used mainly as pasture and only to a lesser extent the meadows.

Present floristic composition variations after its use (pasture or hay) (Table 1).

**Table 1. Floristic composition of grasslands *Festuca valesiaca* + various species mezoxerophiles**

Groups of plants	Share
Gramineae	45 – 65 %
Leguminosae	5 – 10 %
Cyperaceae and juncaceae	1 – 2 %
Species from other botanical families	25 – 35 % (45 %)

Grasslands are dominated by grasses in excess of 65%, which form a rare and discontinuous celery. Among grass species with edifying – *Festuca valesiaca*, *Poa angustifolia* and often abundant *Elymus repens*, *Festuca valesiaca* are common, *Dichanthium ischaemum*, *Koeleria macrantha*, *Poa bulbosa*, *Bromus japonicus*, rarely *Stipa capillata*. Of cyperaceae meet and *Carex praecox*, *Carex montana*, and in some places and *Carex humilis*. Legumes are low (5-10%), the most common are *Medicago lupulina*, *Medicago minima*, *Medicago falcata*, *Trifolium campestre*, *Trifolium repens*, *Lotus corniculatus*, *Onobrychis Astragalus*, and the eroded grassland species is common *Dorycnium pentaphyllum*.

Species of other families have a 25-45% coverage. Meadows are characterized by a smaller proportion of grasses (40-60%) and greater abundance of legumes (15-25%) and various species of other families (15-30%). Species list stands at over 250 components, which shows great instability of this type of grassland vegetation.

## **2. *Agrostis capillaris* and *Festuca valesiaca* grassland**

Meadows of the hills, erected *Agrostis capillaris* and *Festuca valesiaca* forms an area that corresponds largely with the area of oak forests with beech and oak hills (300-800 m altitude).

On sunny slopes with southern exposition, mainly east and west, with very weak acid luvisols, return to the dry forest area properly oak (*Quercus petraea*), *Agrostis capillaris* form a pronounced xerophil meadows, steppe grassland type, against the background of the mesophilic species infiltrated many elements mezoxerophile enlightening and even xerophyte steppe, such as *Festuca rupicola*, *Festuca valesiaca*, *Festuca pseudovina*,

*Dichanthium ischaemum*, *Elymus hispidus*, *Brachypodium pinnatum*, etc. Among pulses, we find: *Trifolium montanum*, *Trifolium pannonicum*, *Trifolium repens*, *Trifolium aureum*, *Medicago falcata*, etc.

### **2.1. *Agrostis capillaris* and *Festuca valesiaca* grassland + different species mezoxerophiles**

Characteristic for this type of grassland is the presence of mesophilic species, including many elements entering and xerophyte mezoxerophile steppe.

Floristic composition is quite diversified, depending on the use and intensity of grazing. Generally, grasslands are dominated by this type of grass at a rate of 55-75% (Table 2).

**Table 2. Floristic composition of grasslands *Agrostis capillari* and *Festuca valesiaca***

Groups of plants	Share
Gramineae	60 – 75 %
Leguminosae	10 - 15 %
Cyperaceae and juncaceae	1 – 5 %
Species from other botanical families	25 – 40 %

Species *Agrostis capillaris* is telling that the mesophilic forms the vegetation cover, along with: *Festuca pratensis*, *Lolium perenne*, *Cynosurus cristatus*, *Trifolium pratense*, *Trifolium repens*, *Lotus corniculatus*, *Plantago lanceolata*, *Leucanthemum vulgare*, *Achillea millefolium*, etc.. Among them are developed and a significant number of elements xerophyte primarily *Festuca Festuca rupicola* or *valesiaca*.

Among legumes, are common: *Trifolium montanum*, *Trifolium aureum*, vary *Coronilla*, *Medicago falcata*, etc. There are also frequent dry different species, such as: *Asperula cynanchica*, *Filipendula vulgaris*, *Potentilla recta*, *Potentilla cinerea* *Potentilla Argent* *Thymus glabrescens* etc. Pasture and weeds abound xerophyte as: *Eryngium campestre*, *Xeranthemum annuum*, *Centaurea stoebe* and others. All these species vegetation prints a mixed character, the transition from grassland steppe to the mesophilic mountain hill.

### **2.2. *Agrostis capillaris* + *Dichanthium ischaemum* grasslands**

As the origin, these meadows are derived from the degradation of grasslands with *Agrostis capillaris* with *Festuca valesiaca*. Celery is relatively low penetration and high load shear occurring during grazing, which is why the irrational and excessive

grazing this species is easily destroyed and is gradually replaced by bushes *Dichanthium ischaemum*, species that become invasive. Degradation occurs more intensely as the vegetation is situated installed on inclined slopes and skeletal and drier soils.

Spreading this kind of lawn area coincides largely with the hills all degraded grasslands.

### **2.3. *Agrostis capillaris* + *Brachypodium pinnatum* grasslands**

These grasslands have a wider distribution area of beech forest. Analyzing the structure of flora, underline a whole rich flora and heterogeneous, with species that enlightening (*Agrostis capillaris* and *Brachypodium pinnatum*) are common species as *Festuca valesiaca* xerophyte, *Festuca pseudovina* and others. It is noted that the large number of pulses not valuable *Genistella sagittalis*, *Trifolium campestre*, and numerous weed species characteristic of recent deforestation.

### **2.4. *Agrostis capillaris* + *Elymus hispidus* grasslands**

Heavily eroded hills, but relatively shady, northern and western slopes *Elymus hispidus* which consolidates *Agrostis capillaris* meadow, forming joint venture of the two grasses or in combination with *Brachypodium pinnatum*.

Floristic composition is very heterogeneous, predominantly high-sized species, covering the ground up to 50-60%. Carpet plant of this type of grassland and also strengthens quickly eroded slopes produce significant quantities of hay, but of poor quality.

The grasslands are found mainly in the southern sector of Subcarpathians Ialomița. It is used as grassland.

### **2.5. *Agrostis capillaris* + *Rhinanthus alectorolophus* grasslands**

Degraded by improper grazing on spring meadow species occur *Rhinanthus sp.* and *Leucanthemum vulgare*, weed-free forage value.

Forage value of these grasslands is very low quantity and quality. They require surface improvement works, among which priorities are: weed mowing, fertilization and rational use by mowing and grazing.

### **2.6. *Agrostis capillaris* grasslands low productivity**

*Agrostis capillaris* grasslands with low productivity are characterized by the presence in floristic composition, with abundant high-dominance, species and xerophyte mezoxerofite that prints a character steppe grasslands, with dominant species-telling, *Agrostis capillaris*.

Among the grass species *Agrostis capillaris* xerophyte that accompany becoming even species co-dominant trees, noted: *Festuca valesiaca*, *Festuca rupicola*, *Festuca pseudovina* species that have poor forage value and *Dichanthium ischaemum*, no forage value species.

When grasses and mezoxerofite xerophyte above are co-dominant trees, is a medium degree of coverage of 25-35%, *Agrostis capillaris* formed with each of them a distinct subtype of meadows.

*Agrostis capillaris* in typical steppe grassland, the basic species, *Agrostis capillaris*, which forms the vegetation cover is 25-50%.

The steppe grasslands, low productivity, with *Agrostis capillaris* and other grasses are found valuable in terms mesophilic feed, such as: *Festuca pratensis*, *Dactylis glomerata*, *Lolium perenne*, *Poa pratensis*, *Festuca rubra*, *Cynosurus cristatus*.

Participate in the proportion of forage legumes is 5-10%. Of these, more coverage have mezoxerofite species: *Medicago falcata*, *Medicago lupulina*, *Trifolium montanum*, *Trifolium aureum*, *Trifolium campestre*, *Atragalus Onobrychis*, *Onobrychis viciifolia*, *Lotus corniculatus*, *Trifolium ochroleucon*. The small proportion are present and moisture loving species, such as: *Trifolium pratense*, *Trifolium repens*, *Vicia cracca*, *Trifolium hybridum*.

Sedges are poorly represented. They may be absent or be present with a coverage of 1-5%, most frequent being: *Luzula campestris*, *Carex caryophylla*, *conglomeratus Juncus*, *Juncus articulatus*, *Juncus effusus*, *Carex spicata*, *Carex hirta*, *Carex humilis*.

### **2.7. *Agrostis capillaris* grasslands better productivity**

*Agrostis capillaris* grassland productivity are better rich floristic composition, the predominant grasses and other mesophilic species, valuable in terms of feed.

*Agrostis capillaris* is the dominant species, which has a coverage of 25-50%.

Among forage grasses with good and very good value accompanying the *Agrostis capillaris* meet: *Festuca pratensis*, *Cynosurus cristatus*, *Dactylis glomerata*, *Poa pratensis*, *Lolium perenne*, *Phleum pratense*, *Festuca rubra*, *Arrhenatherum elatius*, *Trisetum flavescens*.

Valuable grasses, along with the basic species, *Agrostis capillaris*, have broad coverage exceeding 50%, reaching 80% of the area

The productive grassland vegetation *Agrostis capillaris* forage legumes reach a coverage of 10-15%. Among the more frequently they occur: *Lotus corniculatus*, *Trifolium repens*, *Trifolium pratense*,

*Trifolium campestre*, *Trifolium dubium*, *Trifolium montanum*, *Trifolium pannonicum*, *Trifolium aureum*, *Trifolium hybridum*, *Medicago falcata*, *Medicago lupulina*, *Vicia cracca*, *Vicia hirsuta*, *Vicia tetrasperma*, *Lathyrus pratensis*. Participate in the proportion of forage legumes is 30 -40%. Species from other botanical families, which are of interest in terms of feed are relatively few in number and have a medium degree of coverage of 25-30%. Sedges are generally poorly represented, not exceeding 5% coverage overall. More common are the following species: *Carex caryophyllea*, *Carex spicata*, *Carex montana*, *Luzula campestris*, *Juncus tenuis*, *Juncus articulatus*, *Juncus bufonius*, *Juncus effusus*.

**2.8. *Agrostis capillaris* + *Vulpia myuros* grasslands**

This type of grassland is found mainly on land with moderately acidic and sandy soils, on terraces and river floodplains, where the species co-dominant trees *Vulpia myuros* reach a high. The spread of these grasslands is linked to lower terraces in the Carpathian region, where luvisols start.

**2.9. *Agrostis capillaris* + *Apera spica-venti* grasslands**

*Agrostis capillaris* + *Apera spica-venti* grasslands defend small areas are scattered in the form of clusters, including grasslands typical of *Agrostis capillaris*. They are located on eroded slopes with different exhibits on light soils, sandy and dry.

The species most common mat forming plant are mostly annual plants, partially preparing the conditions necessary for the installation of other types and subtypes of the band's most valuable grasslands *Agrostis capillaris* hill. Among the species components include: *Apera spica-venti*, which often reach the dominance of up to 90% *Bromus commutatus*, *Bromus arvensis*, *Bromus secalinus*, *Trifolium campestre*, *Trifolium arvense*, *Medicago lupulina*.

**3. *Festuca rubra* grasslands**

Phytogeographic area of grasslands of *Festuca rubra* stage usually corresponds to the boreal (spruce floor). The lower altitudinal limit of the floor, meadows of *Festuca rubra* intermingle with *Agrostis capillaris*, nemoral floor down and sometimes up to 700-800 m altitude.

Forage species of red fescue grasslands coverage reaches 70-90%. Dominant species is *Festuca rubra*, which contributes most to the formation of ozone production and celery. Among forage grasses found value in these grasslands, we mention: *Cynosurus cristatus*, *Phleum alpinum ssp*

*commutatum*, *Agrostis capillaris*, *Agrostis reptans*, *Anthoxanthum odoratum*, *Poa annua*, *Poa chaixii*, *Poa pratensis*, *Briza media*.

Forage legumes are generally poorly represented (up to 10% coverage), except areas flat to slightly inclined, the slippers mold, where the number valuable legumes sometimes reach 50%. Of these legumes have a higher frequency: *Trifolium repens*, *Trifolium pratense*, *Trifolium alpestre*, *Lotus coniculatus*.

Species from other botanical families, with some forage value, are few and limited coverage, such as: *Achillea distans ssp stricta*, *xanthochlora Alchemilla*, *Alchemilla flabellata*, *Taraxacum officinale*, *Leontodon autumnalis*, *Plantago lanceolata*, *Plantago media* *Pimpinella saxifraga*.

**4. CONCLUSIONS**

In Ialomița Subcarpathians area were identified and characterized three types of grasslands:

- *Festuca valesiaca* + *Dichanthium ischaemum* grasslands with different species and mezoxerophile xerophyte with steppe pronounced, corresponding to low hills, heavily influenced by steppe climate;
- *Agrostis capillaris* grassland mezoxerofil and mesophilic nature, on land sloping from the highest hills;
- meadows of *Festuca rubra* from the mountainous terrain limits Subcarpathians.

Type extension of the largest meadows in the hills is the Ialomita Subcarpathians *Agrostis capillaris* grassland with low productivity. This type occupies the low hills apreciable both, and the high hills.

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