

**CASE STUDY REGARDING THE POTENTIAL PRODUCTIV AND
FOODER GROWTH OF PERMANENT GRASSLAND WITH THE
ASSOCIATION *ACHILLEO-FESTUCETUM PSEUDOVINAE* OF
VALEA IERULUI.**

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Abstract

Article I. An important source of feed for ruminants is the natural grassland, recovered directly from the pasture or as hay. The research aimed at improving the floristic composition and numerical increase of the plants with high forage value of the studied association.

Key words: feed, grow, phytocoenosis, production.

INTRODUCTION

An important source of feed for ruminants is the feed produced on permanent grasslands that are valorized directly from the pasture or as hay and silos. Their production is closely correlated with the climatic conditions and with the applied technology. In our country there are over 4.8 million hectares of permanent grassland, of which 3.3 million hectares destined for grazing and 1.5 million hectares of pasture for hay. This huge amount of biomass is effective for feeding of cattle, sheep and goats.

This area with a good agricultural practice could provide fodder for five million LSU (livestock units) each year, which so far has not been achieved because of failure to agronomic technology and lack of legislative regulations to improve and increase the productive potential of permanent grassland.

The permanent grasslands of the Valea Ierului kept floristic biodiversity, entered many species with high forage value, providing the basis fodder for ruminants.

MATERIAL AND METHODS

The experimental lot was placed on a permanent grassland near Galoșpetreu village, located in the Western Plain of Romania, not far from Valea lui Mihai, at an altitude of 106 m on level ground halomorf soil type, mean annual air temperature 12.5 °C and average annual rainfall of 630 mm.

The research took place over three years (2008-2011) and aims to improve the permanent grassland of Valea Ierului.

During the research has studied the role of organic fertilizer for improving pastures occupied by phytocoenosis *Achilleo-Festucetum pseudovinae*, which is the most widespread grassland association in the

area. In the research were followed the developments of specific grassland biodiversity under the influence of organic fertilizers.

The demonstration lot covers an area of 1 ha, on a natural pasture with a total area of 10 ha. During the three years, studied the changes in vegetation. The first year there was an inventory of all species from the studied surface (Table 1) and during the winter, of experimental lot was fertilized with a dose of 20 t / ha cattle manure.

In the II and III years was followed the evolution of the experimental field making the floristic inventory of species encountered. Forage quality index was taken by L. A. Kovacs (1979).

RESULTS AND DISCUSSION

By studying the species in the three years of experiment is found:

- the numerical increase of the plants with high forage value compared to the first year when nine species were found, in the second year leading to 27 species (300%) and in the third there is a considerable decrease compared to II, goes to only 18 species (200%).

- with tracking of the quality index (Figure 1) are observed that in the first year only one plant with a great forage value had a great numerical increase (Fr. 5) , in the II year four species, and in the III year is a small decrease, to 3 species. Species with a very good forage value (Fr. 4), in the first year were not found, and in II and III year were identified each year four species. In the first year were identified two plant species with good forage value (Fr. 3) in year II 5 species, following a decline in the third year to 4 species. The biggest difference can be seen by the species with middle forage value, in the I year identified three species, following an increase from 9 species in II year and a decrease of 6 species next year. For species with low forage value in the first year we recorded 3 species, as in II year to identify six species and in the third, two species.

The researches had many findings and recommendations for improving the grasslands of the Ier Valley:

- the increases higher production and the improvement of floristical composition of the permanent grassland are strictly necessary for recovery livestock ;
- by application of moderate doses of manure can positively influence the occurrence of species with higher forage value
- these grasslands must be used rationally in the first production cycle to be used for hay, and in the II following cycles for grazing
- from the point of view of floristical composition, the applied manure caused significant changes, favoring the emergence of more valuable species in terms of feed.

Table 1

Number of species with forage value from the experimental field

1. Species	2. Year I before fertilization	3. Year II after fertilization	6. Year III after fertilization	9. Specific quality index (Is)
11. Grasses (Poaceae)				
12. <i>Agrostis capillaris</i>	X	X	13. X	14. 3
15. <i>Agrostis stolonifera</i>	-	X	16. X	17. 3
18. <i>Anthoxanthum</i>	-	X	19. -	20. 1
21. <i>Cynodon dactylon</i>	X	X	22. X	23. 2
24. <i>Dactylis glomerata</i>	-	X	25. X	26. 5
27. <i>Echinochloa crus-</i>	-	X	28. -	29. 1
30. <i>Festuca pratensis</i>	X	X	31. X	32. 5
33. <i>Festuca pseudovina</i>	X	X	34. X	35. 1
36. <i>Festuca rupicola</i>	-	X	37. -	38. 1
39. <i>Lolium perenne</i>	-	X	40. X	41. 5
42. <i>Phleum pratense</i>	-	X	43. -	44. 5
45. <i>Poa pratensis</i>	46. -	47. -	48. X	49. 4
50. <i>Puccinellia distans</i>	51. -	52. X	53. X	54. 3
55. Legumes (Fabaceae)				
56. <i>Astragalus cicer</i>	57. -	58. -	59. X	60. 1
61. <i>Lotus corniculatus</i>	-	X	62. -	63. 4
64. <i>Lotus tenuis</i>	65. X	66. X	67. X	68. 3
69. <i>Medicago lupulina</i>	-	-	70. X	71. 4
72. <i>Trifolium arvense</i>	-	-	73. X	74. 2
75. <i>Trifolium campestre</i>	-	X	76. -	77. 2
78. <i>Trifolium hybridum</i>	-	X	79. -	80. 4
81. <i>Trifolium medium</i>	-	X	82. -	83. 2
84. <i>Trifolium pratense</i>	-	X	85. X	86. 4
87. <i>Vicia cracca</i>	-	X	88. X	89. 2
90. <i>Vicia grandiflora ssp.</i>	-	X	91. -	92. 2
93. <i>Vicia tetrasperma</i>	-	X	94. -	95. 3
Forage plants from other botanical families				
97. <i>Achillea collina</i>	-	X	98. X	99. 2
100. <i>Achillea setacea</i>	101. X	102. X	103. X	104. 2
105. <i>Cichorium intybus</i>	106. X	107. X	108. -	109. 1
110. <i>Daucus carota</i>	X	X	111. X	112. 2
113. <i>Leontodon hispidus</i>	X	-	114. -	115. 1

116.	<i>Plantago lanceolata</i>	-	X	117.	-	118.	2
119.	<i>Plantago media</i>	-	X	120.	-	121.	1
122.	No consumed plants by animals or low level of expendability (ballast plants)						
123.	<i>Verbena officinalis</i>	-	X	124.	X	125.	0
126.	Plants that harm livestock products						
127.	<i>Carduus acanthoides</i>	-	X	128.	X	129.	0
130.	<i>Lepidium ruderae</i>	131.	-	132.	-	133.	0
135.	<i>Xanthium</i>	-	X	136.	-	137.	0
138.	Grass species without forage value						
139.	<i>Allium</i>	-	X	140.	-	141.	0
142.	<i>Althaea officinalis</i>	-	X	143.	-	144.	0
145.	<i>Ambrosia</i>	-	X	146.	X	147.	0
148.	<i>Artemisia santonicum</i>	149.	-	150.	X	151.	0
153.	<i>Atriplex patula</i>	-	X	154.	X	155.	0
156.	<i>Calamagrostis</i>	-	X	157.	-	158.	0
159.	<i>Centaurea jacea</i>	-	X	160.	X	161.	0
162.	<i>Centaurea pannonica</i>	X	X	163.	-	164.	0
165.	<i>Chenopodium album</i>	166.	-	167.	X	168.	0
170.	<i>Cirsium arvense</i>	-	-	171.	X	172.	0
173.	<i>Cirsium vulgare</i>	-	X	174.	-	175.	0
176.	<i>Dipsacus laciniatus</i>	-	X	177.	-	178.	0
179.	<i>Erigeron annuus</i>	-	X	180.	-	181.	0
182.	<i>Erigeron canadensis</i>	-	X	183.	-	184.	0
185.	<i>Galium mollugo</i>	-	X	186.	-	187.	0
188.	<i>Galium verum</i>	X	X	189.	X	190.	0
191.	<i>Gypsophila muralis</i>	192.	-	193.	X	194.	0
196.	<i>Hypochoeris radicata</i>	-	X	197.	-	198.	0
199.	<i>Inula britannica</i>	200.	-	201.	X	202.	0
204.	<i>Juncus effusus</i>	X	-	205.	-	206.	0
207.	<i>Juncus gerardii</i>	208.	X	209.	X	210.	0
212.	<i>Lactuca serriola</i>	-	-	213.	X	214.	0
215.	<i>Limonium gmelini</i>	216.	X	217.	-	218.	0
220.	<i>Ononis arvensis</i>	X	-	221.	-	222.	0
223.	<i>Picris hieracioides</i>	-	-	224.	X	225.	0
	<i>Plantago maritima</i>	226.	X	227.	X	228.	0
229.	<i>Polygonum</i>	-	X	230.	X	231.	0
232.	<i>Potentilla argentea</i>	-	X	233.	-	234.	0
235.	<i>Rumex crispus</i>	-	X	236.	-	237.	0
238.	<i>Scorzonera cana</i>	239.	X	240.	X	241.	0
243.	<i>Sonchus arvensis ssp.</i>	-	X	244.	-	245.	0

246.	<i>Stellaria graminea</i>	-	X	247.	-	248.	0
249.	<i>Tanacetum vulgare</i>	-	X	250.	-	251.	0
252.	<i>Trifolium strictum</i>	253.	X	254.	-	255.	0
257.	<i>Verbascum nigrum</i>	-	X	258.	X	259.	0

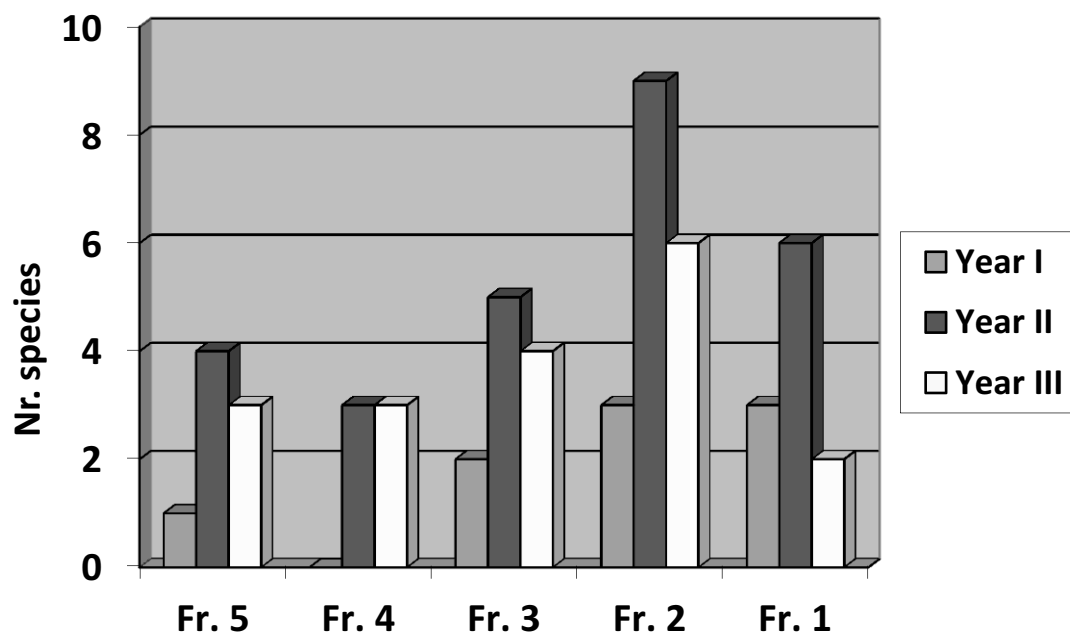


Fig. 1 Number of species with forage value of the experimental field

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