STUDIES CONCERNING THE RESIDUAL EFFECT OF FERTILIZATION AND AMENDMENTS ON THE FLORISTIC COMPOSITION AND PRODUCTIVITY OF SUBALPINE GRASSLANDS

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Abstract. *This manuscript aims to provide a first study on the effect of long-term (12 years) calcium amendment and chemical and organic fertilization (sheepfold) on the subalpine grasslands located in the Bucegi Mountains (at 1800 m altitude). The productivity of the improved grasslands was determined on the basis of floristic survey and specific pastoral indices. The results achieved highlighted increases in the pastoral value which doubled its value from 34 on control plot compared with the plots treated with amendment and fertilization. The green mass production increased threefold from 2.76 t/ha at the control plot compared to the calcium amended and chemically or organically fertilized plots. Our results evaluated a possible dairy milk production of 2,500 - 3,500 liters per hectare in a season of 85 days as a result of feeding animals with grass from the pasture, under the open sky. Calcium amendment and sheepfold treatments seemed to have the highest economic effect in the conditions specific to the subalpine floor of the Carpathians Mountains.*

Keywords: *Nardus stricta* grasslands, calcium amendments, chemical fertilization, sheepfold, dairy milk

5. Introduction

The subalpine grasslands found in the Romanian Carpathians, located at altitudes ranging between 1,600 - 1,800 m up to 2,000 - 2,200 m, and comprising an area of 200 - 250 thousand hectares, resulted mainly from the deforestation of spruce rarities (*Picea excelsa*) and juniper bushes (*Pinus mugo*) [1].

A large percentage of these grasslands comprise a degraded vegetation cover, caused mainly by the invasion of *Nardus stricta* non-valuable species, and thus require the application of improvement methods [12].

The most well-known methods for grassland improvement include the fertilization with chemical fertilizers and sheep folding, as well as calcium amendment used to correct the acid reaction of the soil [4, 5, 6, 7].

The reevaluation of some old data sets on the residual effect of fertilization and amendment was made through floristic survey and by establishing some pastoral

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