LONG-TERM EFFECT OF THE TECHNOLOGIES AND RATIONAL USE OF *NARDUS STRICTA* SUBALPINE PASTURES FROM THE CARPATHIAN MOUNTAINS

Teodor MARUȘCA[1], Vasile Adrian BLAJ[2], Vasile MOCANU[3]

Abstract. *Between 1996 and 2020, in the Bucegi Mountains at 1,800 m altitude, 4 variants for improving subalpine grasslands degraded by Nardus stricta (40-60%) were investigated, namely A: control; B: chemical fertilization 3 years, followed by night paddocking once every 6 years; C: fertilization identical to B on soil amended in 1995 with lime dust and D: grassland sown in 1995, amended identical to C and fertilized identical to B and C. Each variant was used for 85 days by grazing with cows, and the milk production was recorded. The best variant on 25 years average was D (fertilized, amended, sown) where 5.51 t/ha SU and 4,640 liters of milk per hectare were recorded. The effect of amendment was 18-34% (variant C and D) and of the sown grassland (D) was of 14% to variant B, improved only by fertilization. Averaged over 25 years, the improvement works cost 4 Eurocents per liter of milk, representing 9.5% of the average milk price in 2022 of the European Union (42 Eurocents/Liter), our improvement works and usage with dairy cows having a high economic efficiency. Calcareous amendment lasts over 25-30 years and the sown grassland in subalpine conditions has an effect of about 20 years. Research will continue until the effect of calcium amendment is stopped, which is the most important improvement factor next to organo-mineral fertilization.*

Keywords: subalpine pastures, *Nardus stricta* grassy carpet improvement, usage with dairy cows, economic efficiency

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1. Introduction

The permanent grasslands from the subalpine gap of the Carpathian Mountains, with an area of approximately 200,000 hectares, are used for grazing with animals through transhumance [1].

In general, the subalpine grasslands are degraded, being invaded by Nardus stricta, a non-valuable species, which needs to be improved by various methods [1, 18].

[1]PhD. Eng. The Research-Development Institute for Grasslands Brasov, 5, Cucului Street, 500128, Brasov, Romania. Corresponding member of Academy of the Romanian Scientists (E-mails: maruscat@yahoo.com, teodor.marusca@pajisti-grassland.ro)
[2] PhD. Eng. The Research-Development Institute for Grasslands Brasov, 5, Cucului Street, 500128 Brasov, Romania. (E-mail: blajadi@pajisti-grassland.ro)
[3] PhD. Eng. The Research-Development Institute for Grasslands Brasov, 5, Cucului Street, 500128 Brasov, Romania. (E-mail: vasile.mocanu@pajisti-grassland.ro)