

## LONG-TERM EFFECT OF IMPROVEMENT FACTORS OF NARDUS STRICTA GRASSLANDS, THE MINERAL FERTILIZED VARIANT

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**Abstract.** *On a Nardus stricta subalpine grassland in the Bucegi Massif, located at 1800 m altitude in the juniper floor (Pinus mugo), in 1995 an experiment was set up to improve them through different methods of calcium amendment, overseeding and reseeded, periodically fertilized with mineral fertilizers (NPK). The calcium amendment stimulated on average over the last 5 years (2019 - 2023), of the 28 years since administration, the species Trifolium repens which reaches 9.8% compared to 2.7% for the unamended variants, Poa pratensis to 18.9 % fined vs. absent in unamended and Agrostis capillaris at 26.1% vs. 24.3 in unamended. By amending with 7.5 t/ha of lime dust (CaO), the pastoral value after 24-28 years reaches an average of 77.5 compared to 60.4 in the non-amended variants, 27% higher. Likewise, the production of green mass in the same period reaches 11.79 t/ha for the fined variants compared to 6.72 t/ha for the non-fined ones, with an increase of 81%. Overseeding with grass mixtures has been shown to be better in terms of production than reseeded or natural grassland with wild species. The average production of cow's milk per hectare was evaluated at 3970 litters in the amended variants and 3,120 liters in the unamended one, 850 l/ha more. In the oversown varieties, the average milk production was 3,680 liters per hectare compared to 3460 l/ha, 220 liters more. The factors: calcium amendment and overseeding over a period of almost 30 years in the case of mineral fertilization have the greatest influence on the productivity of subalpine meadows of Nardus stricta in the Carpathians.*

**Keywords:** subalpine grasslands, calcium amendment, overseeding, reseeded, productivity

DOI [10.56082/annalsarsciagr.2024.2.91](https://doi.org/10.56082/annalsarsciagr.2024.2.91)

### 1. Introduction

Permanent grasslands where the grass carpet is dominated by the non-valuable species *Nardus stricta* L., need to be improved by different methods [1, 2, 5, 7, 8].

The use of mineral fertilizers to improve the grass carpet of a grassland invaded by *Nardus stricta* is one of the main means known to replace this unwanted species with other valuable forage species [3, 9,10,11,12].

In few cases the experiments on the effect of mineral fertilizers on grasslands dominated by *Nardus stricta* lasted more than 3-5 years [4, 6].

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