

ORGANIC VS. MINERAL INPUT EFFECTS ON TOTAL PROTEIN CONTENT IN SUMMER OF SPONTANEOUS FLORA OF A HILL PERMANENT GRASSLAND FROM BANAT COUNTY

Monica HARMANESCU¹

e-mail: monica.harmanescu@yahoo.com

Abstract

Protein content of grassland forage is one of the most important qualitative parameter monitored quantitatively when is calculate the daily animal ratio for feeding. In this research the aim was to collect data for total protein content of a forage harvested in summer from a permanent grassland situated in a hill region of Banat County, Romania (45°12'N; 21°60'E), on Calcic Luvisol, fertilised mineral or organic. Multivariate analysis technique - Principal Components & Classification Analysis (PC&CA) implemented in STATISTICA 10 software was used to analyse the obtained data. As based/active variables were introduced some ecological soil parameters and fertilisation data. The selected soil parameters were: pH (H₂O), total nitrogen content – Ns (%), phosphorus – Pm (ppm) and potassium – Km (ppm) mobile form. As supplementary variables were used total protein content (%) of hill grassland forage harvested in summer (June 2009) and the gravimetric percent of individual participation of some spontaneous plants: *Festuca rupicola*, *Calamagrostis epigejos*, *Trifolium repens* and *Lathyrus pratensis*. The cases were the seven trials of experimental field, one unfertilised and 6 with different substances flows anthropic influenced by mineral or organic (sheep manure) application. The results were analysed by PC&CA via the correlation matrix. Principal components PC1 and PC2 explained more than 85% of process total variance. The correlation coefficients between total protein content (%) of grassland forage against individual participation data for *Trifolium repens* (%) and *Lathyrus pratensis* (%) were positive and high (0,951, respectively 0,924). Mineral fertilisers applied on grassland had a negative effect on total protein content of forage (correlation coefficients between -0.558 to -0.630), while sheep manure management had a high positive influence (0.976).

Key words: total protein content, fertilisation, quality, grassland, multivariate analysis.