

APPLICATION OF LIQUID ORGANIC FERTILIZER ON RED CLOVER PRODUCTION ON ACID SOIL

Dalibor TOMIĆ^{1*}, Vladeta STEVOVIĆ¹, Dragan ĐUROVIĆ¹, Đorđe LAZAREVIĆ¹, Nikola BOKAN¹, Jasmina KNEŽEVIĆ²

¹University of Kragujevac, Faculty of Agronomy, Čačak, Serbia

²University of Priština, Faculty of Agriculture, Lešak, Serbia

*Corresponding author: dalibort@kg.ac.rs

Abstract

The aim was to analyze the impact of foliar application of liquid organic fertilizer on the forage and seed yield of red clover (*Trifolium pratense* L.) in conditions of dense sowing on acid soil. The field experiment with varieties of red clover (K-39 – diploid, Amos - tetraploid) and fertilizing treatments (control, Bioplant flora) was set up in Čačak (Serbia) on the alluvium soil type, with acid reaction ($\text{pH}_{\text{H}_2\text{O}}=4.8$). The experiment was designed using a randomized block design with three replications, with the plot size of 5x1m, row spacing of 20 cm and the amount of seed of 18 kg ha⁻¹. The foliar application of fertilizers (Bioplant flora, Plant DOO, Russia at a concentration of 0.4%, with the implementation of 250 l ha⁻¹ of water) was carried out in the first and second growth in the second year of cultivation, once at the beginning of intensive growth and the second time two weeks after that. The first growth was used for forage production and the regrowth for seed production. The foliar application of liquid fertilizer influenced the significant increase in forage yield at tetraploid variety Amos. Irrespective of foliar application of liquid fertilizer, cultivar K-39 had a significantly higher number of inflorescences per stem, number of inflorescences m⁻², number of seeds per inflorescence, fertility of flowers and seed yield than variety Amos. Foliar application of liquid manure has affected a significant increase in the value of yield components, primarily fertility of flowers and seed number per inflorescence in cultivar K-39.

Key words: red clover, Bioplant flora, yield, variety

Introduction

Thanks to the high and stable yield, diverse use, relatively modest requirements for cultivation and good forage quality, red clover (*Trifolium pratense* L.) is an important plant species in the production of forage for livestock feed rich in proteins. In the Republic of Serbia as the most rational proved to be combined production of forage and seeds of red clover (Lugić et al., 1996), where for the production of seeds is used the second growth in the second year and sometime the second growth in the third year. Seed yield of red clover is mainly determined by the genetic base of the cultivar, environmental conditions of the area, time of cut the first growth, presence of insects pollinators as well as the interaction of genotype/environment (Steiner et al., 1995). Proper mineral nutrition, and the content of some macro and micronutrients in plants can also be a limiting factor for achieving high yield of red clover, especially when production takes place on acid soils, where certain macro and micro-elements are heavily accessible to the plants. According to Taylor and Quesenberry (1996) acid soils are characterized by a high prevalence of easily accessible form of aluminium, iron and manganese and reduced content of readily available phosphorus, calcium and molybdenum.

