

FORAGE YIELD OF RED CLOVER GROWN FOR COMBINED FORAGE AND SEED PRODUCTION

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Abstract

The impact of precipitation on forage yield, hay yield and water content in the green forage of red clover (*Trifolium pratense* L.) was examined in field trials. The crop was grown for combined forage and seed production. The experiment was established on alluvium soil in a randomized block design. During period 2010-2012 four red clover cultivars (K-39, K-17, Una, and Viola) were analyzed for first cut in their second year. Significant differences between cultivars were observed for green forage yield, hay yield, and water content in the green forage, regardless of precipitation in the production year. It was determined that the green forage yield in 2010 was significantly higher compared to 2011 and 2012. year. Thereby the hay yield had no significant difference concerning 2010 and 2011. year, while significant reduction was reported in 2012. year. Green forage yield was positively correlated with both hay yield and the water content of green forage.

Key words: red clover, forage yield, hay yield.

Introduction

In order to increase and intensify livestock production, the solution should be searched in highly productive plant species, with good quality, which fit in the system of continuous production of livestock feed (green forage conveyor) (Pejić et al., 2005). Together with efforts to reduce energy consumption and environmental pollution, intensify sustainable agricultural systems and conserve biodiversity Rochon et al. (2003) proposed increases in forage legume acreage. Being nitrogen fixers, these plants are minimally treated with nitrogen fertilizers, whose residues easily leach from the soil, causing contamination of ground waters, local streams and ponds (Janzen and McGinn, 1991). One such plant is red clover (*Trifolium pratense* L.) which due to its high stable yields, varied use, relatively modest growing requirements and good forage quality plays an important part in the production of protein-rich livestock feed. As a perennial legume, red clover has a high ability to regenerate; therefore, depending on growing conditions, it can produce up to even three cuttings per year. Under natural water supply conditions, with adequate cultural practices used, green forage yields of up to 147.7 t ha⁻¹ can be achieved during the utilization period (mostly three years) (Vasiljević et al., 2010). Rochon et al. (2003) point out the advantages of the legume green forage usage which reflect in high protein content, high digestability and low level of tannins and flavonoids. However, green forage yields of red clover vary widely depending on weather conditions, most notably the amount and distribution of rainfall during the year. For these reasons, in order to obtain high and stable yields of red clover and utilize its genetic potential of cropping, the possibilities of its production in different agroecological conditions must be known. Beside that, the red clover seed production in the Republic of Serbia is insufficient to ensure the needs of the local market

