A Forage Mixture with Red Clover in the Fourth Experimental Year

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ABSTRACT

The present paper aims to follow the behaviour of a forage mixture with red clover in the fourth experimental year. We followed the behaviour of a complex mixture consisting of *Trifolium pratense* (15%), *Lolium perenne* (20%), *Festulolium* (25%), *Festuca arundinacea* (25%) and *Phleum pratense* (15%) under the influence of mineral fertilization in the climatic conditions specific Plateau of Transylvania, Romania. Experience was installed in the spring of 2012 in experimental fields located inside the Agricultural Research and Development Station Turda. The mixture was sown on 2 densities namely 12.5 cm and 25 cm distances between rows and they were fertilized in early March with complex NPK and ammonium nitrate (33.3%) in four different doses: V1 - control variant, unfertilized, V2- N50P60K80, V3- N75P60K80 and V4 -N100P60K80. An interesting evolution of the forage mixture was observed in the fourth experimental year. Fertilization with N75P60K80 seemed to have a favourable influence on forage mixture productivity.

Keywords: *forage, mixture, red clover, fertilization.*

Introduction. A suitable choice of grass-leguminous mixture is a prerequisite for the production of quality animal feeds and thus for a greater production of meat and milk (Lazarevic *et al.*, 2005). The forage resulted from forage mixtures has an optimum balance of nutrients and thus has a great digestibility and is better preferred by animals.

In Transylvania Plain studies are still required in order to highlight the most suitable forage mixture for the soil-climatic condition specific to this area. Red clover in mixture with other legume and grass species provides a high-quality forage.

Aims and objectives. Through this study we aimed to follow the behaviour of a forage mixture with red clover in the fourth experimental year.

Materials and methods. The experiment was conducted in the field of Agricultural Research and

Development Station Turda in the period 2012-2015. The experimental area is characterized by an average annual temperature of 10.4°C and average annual rainfall of 523.2 mm. Soil type is classified as typical faeoziom clay. The biological material is a complex forage mixture formed by was *Trifolium pratense* (15%), *Lolium perenne* (20%), *Festulolium* (25%), *Festuca arundinacea* (25%) and *Phleum pratense* (15%). The mixture was sown on the spring of the year 2012, on 12.5 cm and 25 cm distance between rows and they were fertilized in early March with complex NPK and ammonium nitrate (33.3%) in four different doses: V1 - control variant, unfertilized, V2 – fertilized with N50P60K80, V3 – fertilized with N75P60K80 and V4 – fertilized with N100P60K80. The experimental parcels were mowed 3 times / year. In this paper we present data recorded in the

Tab. 1. The influence of experimental factors on dry matter production in 2015

Experimental plot	Average production [t/ha]	V1	V2	V3	V4
		8.24	8.38	11.24	10.52
V1	8.24		0.773	0.018**	0.023*
V2	8.38			0.916	0.946
V3	11.24				0.032*
V4	10.52				
Increase in production [%]		Ct.	102.3	135.8	127.7

Experimental plot	Average production [t/ha]	V5	V6	V7	V8
		9.70	8.10	10.14	11.10
V5	9.70		0.164	0.457	0.054
V6	8.10			0.089	0.056
V7	10.14				0.272
V8	11.10				
Increase in production [%]		Ct.	83.5	104.6	114.4

Fig. 1. The influence of experimental factors on floristic composition in 2015

fourth experimental year, namely from the year 2015.

Results and Discussion. In which concerns the sown technology, our results showed that the highest dry matter production was recorded on the experimental variants sown on 12.5 cm. Analyzing the influence of fertilization on forage mixture production, our experiment pointed out that the most efficient treatment is the fertilization with N75P60K80, experimental plot where we recorded the highest increase in production of 135.8% (Tab. 1).

In which concerns the floristic composition our experiment highlighted that festulolium is

more aggressive on the variants sown on 25 cm between rows, fertilized with N50P60K80. On the other hand the leguminous represented by red clover reacted better on competition with other species on the variants unfertilized (Fig.1).

Conclusion. The results showed that the forage mixture studied can generate medium productivity even in the fourth experimental year.

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