INCREASING BIOMASS IN *PHLEUM PRETENSE* SPECIES ACORDING TO CLIMATIC CONDITIONS AND FERTILIZATION

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Abstract

This research analyzes the influence of rainfall during the cold season (November to April) and mineral fertilization on production Phleum pratense in the first and second harvest of dry matter. Water accumulated in the cold season is an important defining the first harvest. Second Harvest is less influenced even if spring rains are plentifull.

Key words: rainfall, fertilization, irrigation, dry mater,harvest

INTRODUCTION

The importance of knowing the influence of climatic factors on forage production was highlighted by numerous publications both in our country and other. Influence climatic factors on dry matter yield and its seasonal distribution is given temperature, the light and speed wind. In experimental field is settled on a silted molic soil, low to medium carbonated. The caractheristics of this field are: a clay texture, low reaction of alcalescence, medium humus content, medium supplied with total nitrogen, mobile phosphorus and mobile kalium. I *Phleum pratense* used as biological material, species with high definition, cultivated in many countries in Europe.

MATERIAL AND METHOD

The experience was made up of two blocks, which were followed three growth factors: mineral fertilization, nitrogen and water supply, pedoclimatic factors being the only variable. Each block consisted of four groups arranged in two repetitions. Was seeded in early spring, the amount of seed per hectare in a agrofond -14 kg 25 kg P / ha, 70 kg K / ha and 100 kg N / ha (2 x 50 to prepare the ground and in the summer). Irrigation was done when soil water deficit was below 50% of the IUA. In 2010 there

have been 11 to 120 mm watering, watering in November 2011 with a total of 160 mm and 2013 June 60 mm waterings. Climatic factors were as follows: air temperature (maximum and minimum), the soil temperature, solar radiation, the duration of the sun brightness / hour, precipitation, harvesting speed wind. Have been made harvesting at intervals of 28 days, a lot 7 days and recorded production of dry matter kg / ha.

RESULTS AND DISSCUSIONS

Researches conducted various action focuses on natural climatic factors on the production of dry matter. Does the research shows that in autumn (October-December) and winter (December-February) due to rainfall and snowfall fallen soil moisture increases, so in the spring production of dry matter obtained from the first harvest *Phleum pratense at - Kampe 11* is much higher than those obtained in the summer. There is a linear correlation between rainfall in the autumn of last year -winter the growing season species *Phleum pratense* because they affect both the first and second harvest, especially if the May-June there humidity. Fact deficiency observed in the years 2010/2011 and 2013/2014 when yields were 5t / ha dry mater harvest is due to accumulation of water from rainfall in autumn-winter period, while in other years (2011/2012 and 2012/2013) yields was 1t / ha. It can be said that the variation in species biomass accumulation *Phleum pratense* can be differentiated into three periods: April-June when obtaining a high dry matter production under conditions of optimal supply of nutrients and water. Rainfall also have an important role in the accumulation of biomass strengths and adversely affect wind speed acceleration due to potential evapotranspiration. In the period from June to August is a decrease in dry matter production due to high temperatures and low precipitation falling during this period which can be seen from Figures 1,2,3. And in early autumn (August-September) dry matter production is influenced by average daily temperatures and precipitation.

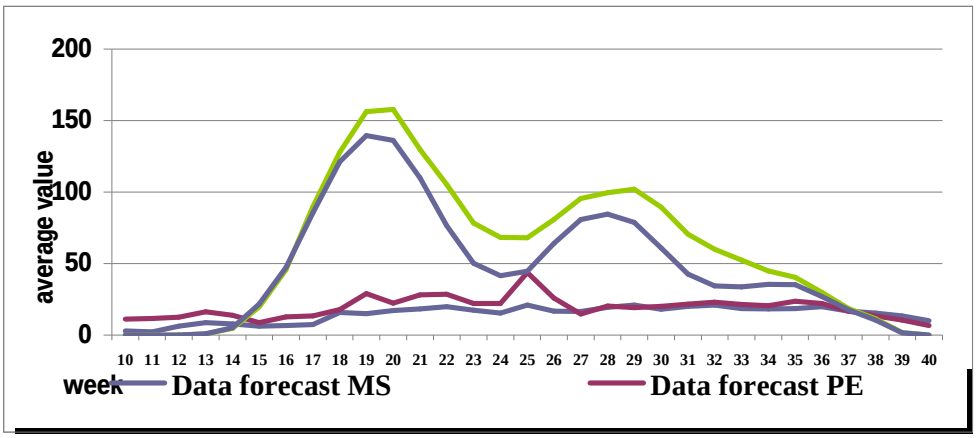

Fig. 1. Value of evapotranspiration and biomass accumulation of Phleum pretense (kg/ha/day) 2011

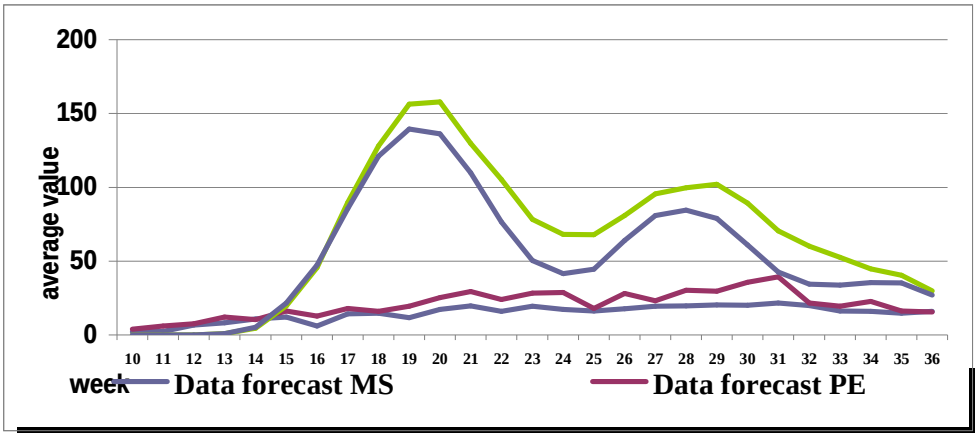

Fig.2. Value of evapotranspiration and biomass accumulation of Phleum pretense (kg/ha/day) 2012

If large differences can be observed irrigation crop to non-irrigated crop. The data presented in the three figures may be noted that the potential evapotranspiration is influenced by mean air temperatures, solar radiation and wind speed . Dry matter yield obtained in the three experimental years ranged from 6.9 t / ha and 10.4 t / ha in non-irrigated crop and 8.6 t / ha and 12.9 t / ha in irrigation crop. Can be notice that 2012 is driest year are lower crop yields even under irrigation the optimum fertilization. In other years the differences between irrigated and non-irrigated yield was 2.5 t / ha.

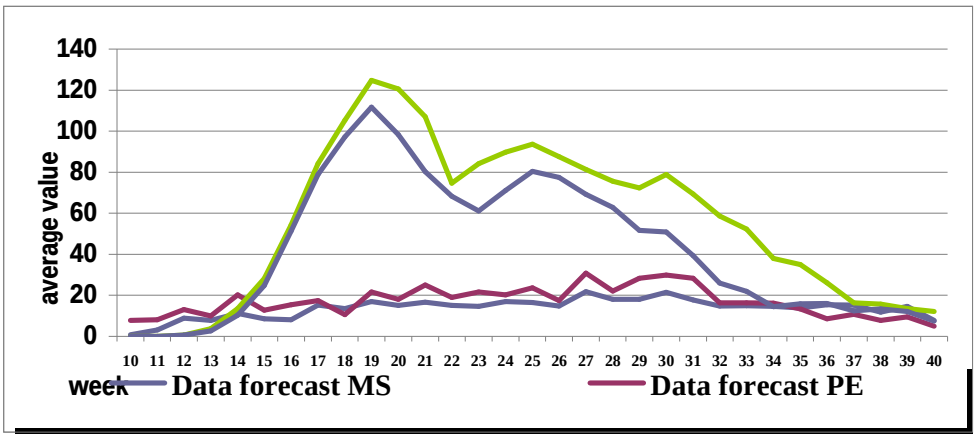

Fig. 3. Value of evapotranspiration and biomass accumulation of Phleum pretense (kg/ha/day) 2013

CONCLUSIONS

Biomass accumulation at the first harvest *Phleum pratense* where the species is influenced by rainfall in autumn-winter and spring rainfall have a positive effect on production of summer. Increased production of dry matter *Phleum pratense* species growing under optimal enroll as a sigmoid curve which depending on climatic factors disturbing changes shape. The same type of curve was recorded with other forage species studied. This model can be used to calculate and correct planning *Phleum pratense* forage production in both species when sown pastures and where permanent grassland.

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