

STUDY ON THE AGROFORESTRY SYSTEM WITH OAK TREES (*Quercus robur* L.) IN THE CONTEXT OF CHANGING CLIMATE

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Abstract. *The permanent meadows from the plains and hills of Transylvania, grazed with cattle from ancient times, are covered with scattered trees providing shade to animals. The current global warming underline the need for the protection of animals and the vegetal layer of the meadows from the sunlight and drought. In this paper, we studied the positive effects of the presence of trees on the productivity and biodiversity of meadows in comparison with the treeless surfaces exposed to a more accentuated aridity. Under oak trees (*Quercus robur* L.) we found 57 plant species compared to 45 in open land, with over 13 t/ha green mass production compared to approx. 10 t/ha in open land and a pastoral value of approximately 69 compared to 56 of a treeless grassland. In addition to increasing biodiversity and productivity, under the oak trees the agrochemical values of the soil increase, having also additional production of acorns, animal shade and pastoral landscapes.*

Keywords: grassland with oak trees, biodiversity, grass production, pastoral value

1. Introduction

According to WMO (World Meteorological Organization) data, in the century (1901-2000) the average temperature of the globe increased by 0.6 Celsius degrees. For Romania this increase is only 0.3⁰C.

One of the most effective measures to fight against climate changes is to expand the agroforestry system already in use in the countries with drier climates.

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