

## RESEARCHES REGARDING THE INFLUENCE OF THE POSITION ON THE HILL UNDER MAIN PHYSICAL PROPERTIES OF THE SOIL IN DIFFERENT CROP SYSTEM

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**Abstract** *The paper based on the researches carried out during 2008-2011 in Oradea in the plots for flow check placed on the hill with 10% slope. The area is characterized by average of the multianual rainfall of 620 mm.[1,2,3] The following variant were studied: clean fallow, pasture, maize seeded from hill to valley, maize seeded on the level curves direction, wheat. The physical analysis were made in the profiles situated in the top and at the base of the hill. The biggest difference between structure degree determined at the base of the hill and top of the hill was registered in the variant with clean fallow (40,2%); in the other variants the differences were of 33,3% in the variant with maize seeded from hill to valey, of 12% in the variant with maize seeded on the level curves, of 8,2% in the wheat and of 7,6% in the pasture. In the horizons of the profile from the base of the hill the values of the bulk density were smaller than the values registered in the top of the hill, the total porosity values were bigger, the hydraulic conductivity values were bigger too and the penetration rezistance values were smaller. As consequence, the yields determined at the base of the hill were bigger than the yields determined in the top of the hill; in the maize seeded from hill to valley the differenes were bigger than the differenes registered in the variant with the maize seeded on the level curves. The results researches sustain the need of the soil management against erosion based on the protective plants and the crop on the level curves direction.*

**Keywords:** macrostructure hydrostability, bulk density, total porosity, penetration rezistance, hydraulic conductivity, erosion.

### Introduction

Erosion affects important surfaces in Romania; the erosion affects the soil from Western Romania too; in the Bihor county (North Western part) a surface of 200.000 hectares (38%) have a slope bigger than 5% and there is a potential erosion. [1,2,3] A specific soil management is needed on the eroded soil [4,5,6,7,8,9, 10,12,13] and the researches regarding this point of view started in 1973 at Cordău by Colibaş I et al. Colibaş I, Maria Colibaş and Mihaş I., were made researches regarding the soil management of the eroded soil in Hidişelu de Sus (1980-1983) and Pocola (starting with 1983). After 1986, the coordinator

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