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MANURE AND GREEN MANURE INFLUENCE ON MAIN PHYSICAL PROPERTIES OF THE SOIL IN THE CONDITIONS OF NORTH-WESTERN ROMANIA

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Abstract. *The paper based on the researched obtained in 2011 in an experiment placed in 2000 in Oradea on a hill with 10% slope. The mixtures of green manure lupin+oat+rape and lupin+oat determined a better values of the structure, bulk density, total porosity, penetration rezistance and hydraulic conductivity than lupin like pure crop and than the mixture vetch+oat and ryegrass. The manure 25 t/ha and especially manure 50 t/ha determined the best values of the studied physical properties than green manure. The results researches sustain the opportunity of the green manure like mixture (lupin+oat+rape, lupin+oat) and of the manure for improve of the physical parameters of the erosioned soils.*

Key words: green manure, manure, structure, bulk density, penetration rezistance, hydraulic conductivity

1. Introduction

One of the components of the sustainable agriculture is the organic fertilization. [1, 2, 3, 11, 12] Among the type of the organic fertilizer, the green manure occupied a distinct place, very important. [10,13]

During the time, many researches (Broadbent and Norman, 1947; Hallam and Bartholomew, 1953, Flaig et al, 1975 etc., referenced by Eliade et al, 1983) established that the green manure of Lupinus sp. in pure crops, due the small C/N report, does not improve the soil's humus content. The biological school from Western Europe solved this problem using leguminous (vetch) with gramineous (rye, oat, ryegrass) mixture (Roger, 1976, referenced by Eliade et al, 1983); this mixture has an optimum report monosaharide (cellulose) nitrogen. In Romania, the vetch is known only as a fodder and to recommend it for green manure would not be successful. Lupinus sp. was and is known as a green manure. The use of the green manure on the erosioned soil is very important possibility to improve the soil parameters and to increase the yields (Neamtu, 1996, Pintilie et al, 1980). Domuţa, was made the research regarding the use of the mixture with Lupinus sp. and gramineous starting 1988 on erosined soil from Pocola, Bihor county [4, 5, 7].

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