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CHARACTERIZATION OF SOILS FROM DUMBRAVA, TIMIS COUNTY

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Abstract: The purpose of this work is the collection, processing and accumulation of scientific data related to environmental factors, the geographical characteristics of the surface, soil resources, data related to the nature and intensity of limiting factors, the qualitative assessment of land. The commune of Dumbrava in Timiș County is characterized by a diversity of soils that support a varied range of agricultural and economic activities. This area is located in a lowland region with favorable agricultural climatic conditions, and the quality of the associated soils is an essential factor for agricultural productivity and ecological sustainability of the commune. The object of study is the lands belonging to the Dumbrava territorial administrative unit, Timiș county, in an area of 5667 ha, from which 4816 ha of agricultural land, respectively the soils identified in the mentioned perimeter. They are studied in relation to the environmental factors that condition their presence, together with them, forming homogeneous ecological territorial units (UT or TEO) with specific suitability/favorability for different agricultural or forestry uses/for different cultivated plants and with requirements and technologies improvement or specific cultural currents.

• Introduction

By soil in the concept of the Romanian school of pedology is meant a natural body with its own organization, modified or not by anthropic activity, which forms and develops over time, on the surface of the earth's crust, under the action of bioclimatic factors on the material, characterized by: specific structure triphasic (solid, liquid and gaseous), porous polydisperse composition of the solid phase, vertical differentiation of composition, the presence of the living component, uninterrupted and complex dynamics, characteristic of being fertile, etc., which in addition to its characteristic of a historical-natural body, represents the environment in which food is produced for everything that lives on our planet, whether it is represented by land or is submerged.

• Material and method

From a geomorphological point of view, the municipality of Dumbrava has a total area of 5667 ha, of which 4816 ha is agricultural land, distributed as follows: arable land 3335 ha, pastures 977 ha, meadows 329 ha, vineyards 1 ha, orchards 174 ha (figure 1), and 851 ha of non-agricultural land: forests 549 ha, water, bushes and thickets 39 ha, unproductive 19 ha, roads and railways 151 ha, buildings 93 ha (figure 2).

Figure 1. Distribution by categories of soil use in Dumbrava area. Agricultural land

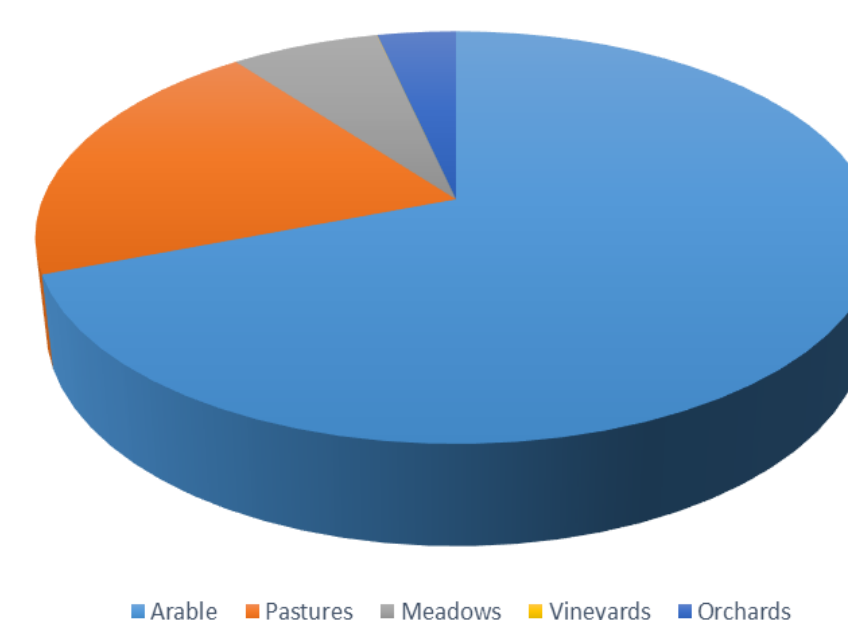
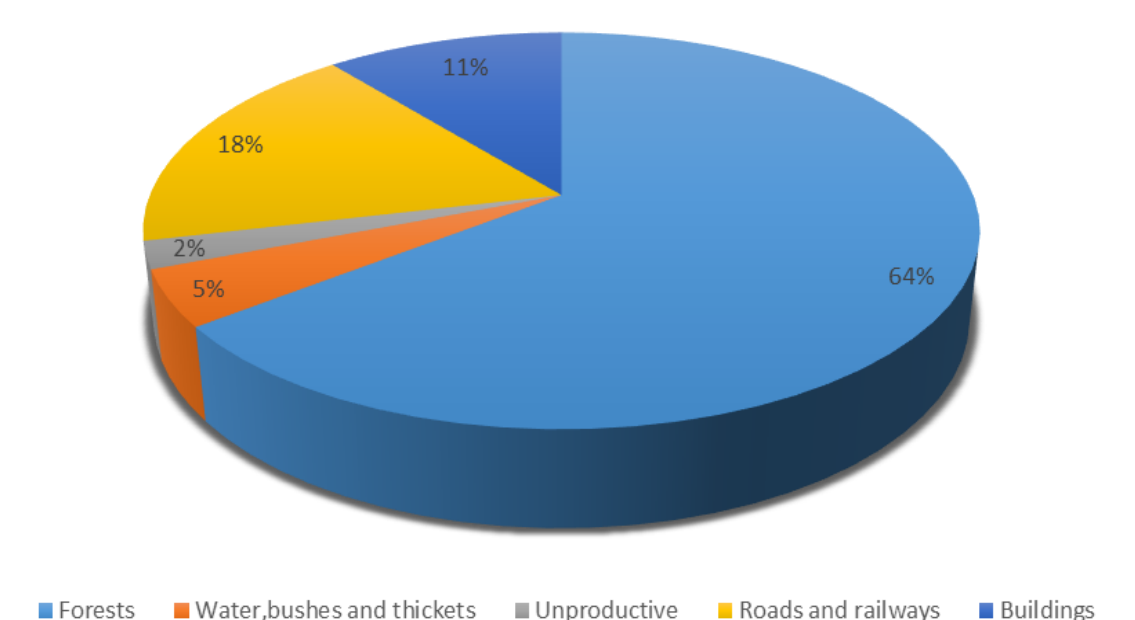


Figure 2. Distribution by categories of soil use in Dumbrava area. Non-agricultural land.



• Results and discussions

In close correlation with the variety of geomorphological factors that determine the existence of diversified relief units, the geolithological ones, which led to a great diversity of parental materials, or the hydrological ones, as well as the various anthropic interventions within the researched space, the current edaphic cover is represented by: eutricambosols, luvisols, alluviosols, stagnosols, regosols (figure 3), which reflect, through their geobiochemical and morphological properties, the main defining and determining characteristics for the growth and fruiting of the main cultivated plants, expressed by credit notes, based on which the lands were classified in quality classes, from I to V (figure 4).

The plain area is constituted as a geomorphological accumulation unit, located at the junction between the Piedmont area and the meadow, representing the eastern compartment of the Western Plain, which enters in the form of a bay, along the Bega river, whose altitude does not exceed 160 m.

Figure 3. Distribution of soil type from Dumbrava area

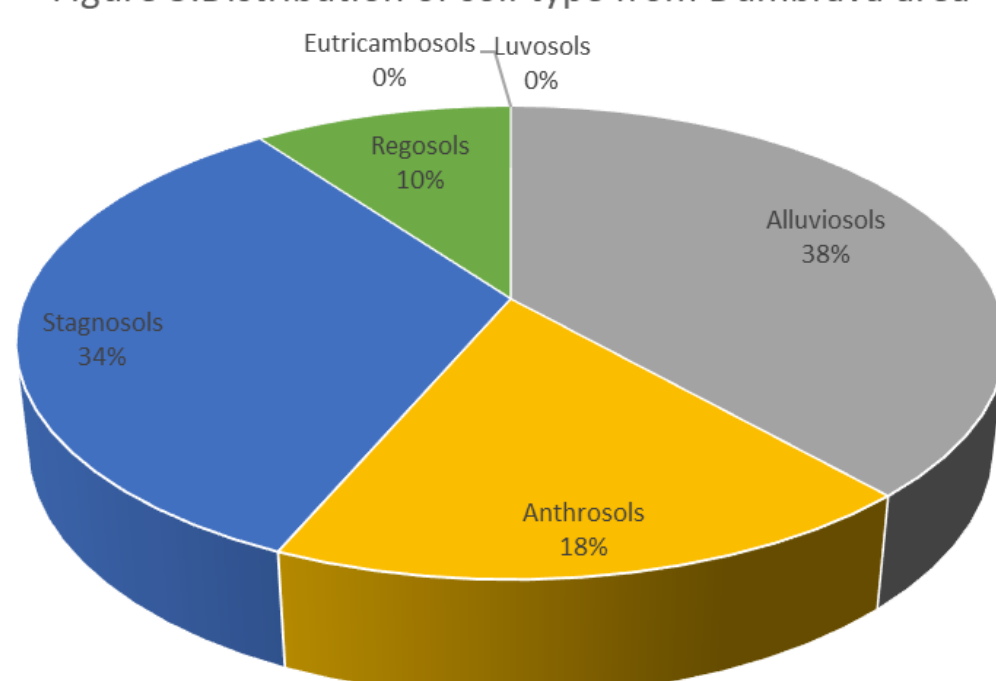
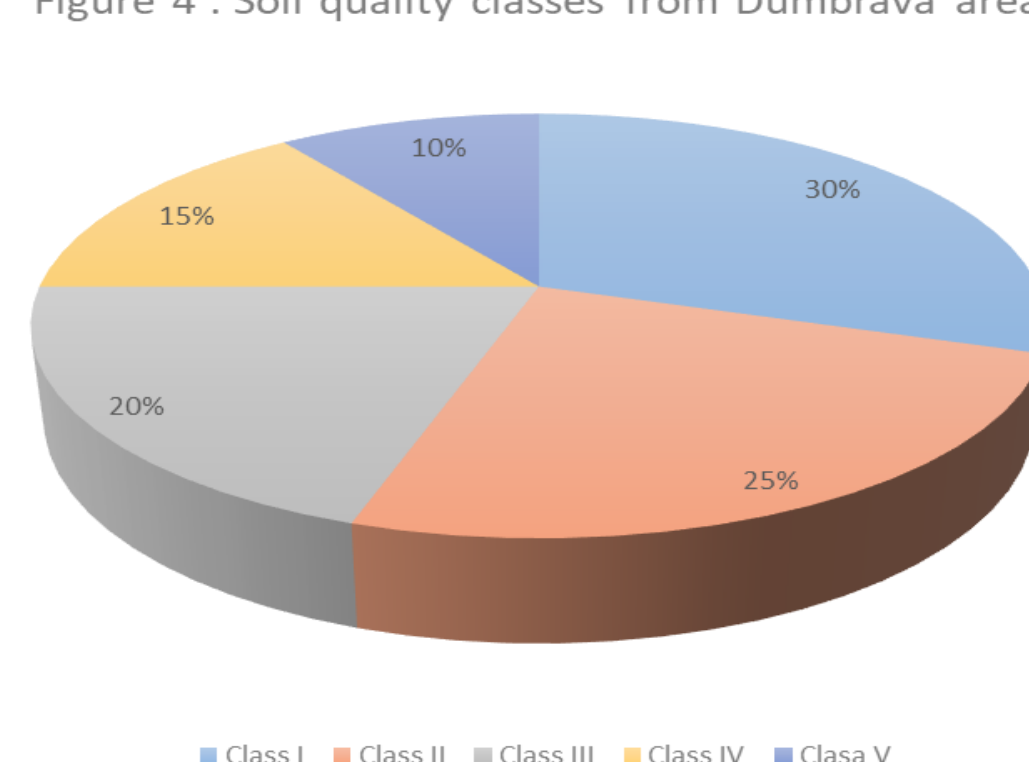


Figure 4 : Soil quality classes from Dumbrava area



• Conclusions

Determining soil quality takes into account both soil properties and other vegetation, relief, climate and hydrology factors that determine agricultural or forestry production capacity.

This can be achieved by carrying out soil studies and laboratory analyzes on the basis of which to prepare soil maps, which more precisely represent the geographical areas, which will determine the credit evaluation and the technology of the evaluation grades for the established part of the land.

Work of prevention and control of excessive moisture and surface erosion shall be carried out on the basis of a complex site investigation carried out in accordance with a site plan suitable for the intended purpose.