Abstract

The soil is considered the fundamental natural resource of the agricultural system, and is at the same time the essential support of life. It is known that over 90% of human and animal food is produced in or on the soil and the origin of all the living organisms on „Earth" is directly or indirectly connected to the soil. In contrast to other means of production, the soil layer of the Earth, of one country or one region is limited from a quantitative point of view and consequentially the attainment of increasingly higher crops is not to be done through extensive agriculture, but only by increasing the production per surface unit. Also, the soil is the result of the rock, the relief, clime and vegetation, being formed through the permanent and symultaneous action of the biosphere, the atmosphere and the hydrosphere on the litosphere and also of human activities. The purpose of our research is the description of the main pedoagrochemical characteristics of representative Reghin region soils, such as typical preluvosoil [SRTS-2003], brown argiloilluvial soil [SCRS-1980] and argic chernozem [SRTS-2003], and argiloilluvial chernosiem [SCRS-1980] destined for fruit tree plantations. It is a known fact that the favorability of soils for apple growing are closely related to the clay content of soils, as it was proved that these species grows normally at indicator values between 20 and 40% [Teaci et al., 1976]. The state of the research is given by rigorous experiments in a classic apple tree plantation performed on a typical preluvosoil and an argic chernozem from the Reghin region using the *Golden Delicious* and *Starkrimson* apple tree varieties that are representative for the region and are very popular both inside and outside Romania's borders. The studied territory lies at the Eastern edge of the Transylvanian Plain, northwest of the ciry of Reghin, where from a geological point of view, the sedimentary fragmentations are superposed, in an alternance of thin layers of clay marl, sandy marl and cohesive sands. This geological constitution favors both surface and profound erosion. The importance, originality and degree of novelty of these experiences is related to problems yet to be solved concerning the control of soil erosion on representative slopes from fruit tree plantations, and also the measures taken for the preservation and enhancement of organic matter content and the formation of humus in accordance with the climatic specificity of the Reghin region and the unfavorable repercussions of recent climatic anomalies.

Key words: soil, fertility, pedoagrochemical modifications, apple tree