THE COMPACTNESS STATE OF THE SALINE SOILS ON THE WESTERN SLOPE OF THE BEJENEASA FARM – COTNARI

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Abstract

The state of compactness is a complex characteristic of soil resulting from its textural characteristics and bulk density values. It is influenced both by the natural processes that contributed to the formation of the soil and by the agricultural works carried out. Our studies concern the compactness state of saline soils on the Bejeneasa Farm, Cotnari Vineyard, from the northeast part of Romania. The studied area is about 11.6 hectares in six vineyard plots. It is situated on the upper part of the slope. The absolute altitude ranges between 152 m and 172.5 m. The average annual precipitation and annual temperature values are 508.9 mm and 10.9°C, respectively. To highlight the causes of weak growth of the vine on the slope with a slope of 8% and with the western exposure, five soil profiles were made in representative locations following the cutting clearing of the vine plantation. The soil profiles were made after cutting the vine stems due to the growing stagnation and the small yields obtained from the grapes. The soil profiles were located in the upper and lower parts of the slope, both in the part with a uniform slope and on the diluvial–colluvial glacis located in the contact area with the land with a lower slope. From each soil horizon, soil samples were collected for laboratory analysis. The analytical data showed that the state of compactness of the saline soils was influenced by both soil formation processes and agriculture during the growing season and in the cold season. The range of values of the bulk density for the tracks of the wheels of agricultural machines was wider compared to those recorded on the row of vines.

Keywords: compactness, saline soils, vines