DETERMINATION OF TOTAL SUGAR CONTENT IN SEDIMENTS WITH EMMERICH-A METHOD AND ITS IMPORTANCE: AN EXAMPLE FROM AFYON-KARAMIK LAKE

Gültekin Kavuşan** and Ahmet Orhan***

Abstract.- Karamık lake is located at the southeast of Şuhut county in the vicinity of Afyon region and has been developed in the control of neotectonic faults. Around the lake area 6 shallow boreholes were drilled from which 5 organic material rich ones have been evaluated in this study. Samples have been collected with a special pvc casing mounted on portable-hand drilling apparatus. According to the analysis performed at organic material rich parts of samples, approximately 58,35% surface moisture, 12,89% hygroscopic moisture, 30,96% organic material content and 69,04% ash content have been determined. By using Emmerich-A analysis method for inverted sugar content of Karamık lake actual sediments have been determined as 6,67 ppm at air-dried base and 13,66 ppm at dry-mineral matter free base. The average pH value of same samples is 8,05. The relationships between pH/invert sugar and OM/invert sugar of the Karamık sediments are directly proportional, whereas total moisture content/invert sugar ratio changes are indirectly proportional. Although sugars could have high dissolving ratio in water, in the lack of water content it has been observed that all of the hygroscopic moisture content was consumed during the invertisation. In terms of basin geometry, sugar content increase in the sediments of organic material rich sapropelite which deposited in transition from lake water to the swampy areas. Also sugar content increases in the NW part of the Karamık lake region, characterized as regularly and uniformly sediment transportation, whereas the sugar content decreases around the Koçbeyli-Aydoğmuş fault region where the aluvial fan deposits rich in coarse grained sediments occur and leaned the NE part of the lake.

Key words: Afyon, Karamık Lake, saccarites, invert sugar, Emmerich-A method.