

EVALUATION OF THE RELATIONSHIP BETWEEN SOIL ELECTRICAL CONDUCTIVITY AND SOIL TEXTURE IN NON-SALINE SOILS AT FIELD CAPACITY

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Abstract

Of the various factors that affect crop yield, soil texture is usually a significant contributor.

In non-saline soils at field capacity, soil texture will be a dominant factor influencing the electrical conductivity. Effective management of the soil resource requires basic information about the spatial distribution of various soil attributes particularly soil texture. In this study, the ability of two sensors 1) EM38 and VERIS3100 to monitor the variation of the soil texture were evaluated and compared. The results showed that EM38 and VERIS3100 readings are directly associated with clay and silt quantities but they are not able to estimate the variation of the clay contents. EM38-v has more ability to predict soil texture in the upper 90 cm in comparison with others methods ($R^2 = 0.63$). Comparison between present results and the same studies shows that the estimation of the soil texture variation using EM38 and VERIS3100 readings requires more investigation.

Keywords: soil texture, electrical conductivity, EM38, VERIS3100



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