

Review Article

Electro magnetic induction sensor for measuring soil electrical conductivity

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Summary

Soil electrical conductivity (EC) is a measurement which correlates with various soil properties that affect crop productivity including soil texture, cation exchange capacity, drainage conditions, organic matter level, salinity and sub soil characteristics. Various remote sensing technologies are now-a-days used in agriculture to obtain relevant information for improving soil and nutrient management. Potential technologies are Electro Magnetic Induction (EMI), Ground Penetrating Radar (GPR) and Spectral Reflectance. From the research literature, it is evident that EMI sensor can be operated simply and easily and can provide useful and practically relevant information for future planning. GPR sensor is a complex technique and is not at present sufficiently developed for practical use in agriculture. Spectral reflectance of bare soils can be useful to detect contrasting soil surface colours (e.g. organic matter differences) but is more useful for detecting patterns in growing crops which may or may not reflect differences in the nature of underlying soil. The present article therefore discusses the practical relevance and usefulness of EMI sensors for measuring one of the important physical properties of the soil *i.e.* electrical conductivity.

Key words : Soil electrical conductivity, Electro magnetic induction sensor, Soil electrical conductivity map, Precision farming

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