

Apparent electrical conductivity in correspondence to soil chemical properties and plant nutrients in soil.

Abstract

Spatial variability and relationship between soil apparent electrical conductivity (EC a), soil chemical properties, and plant nutrients in soil have not been well documented in Malaysian paddy fields. For this reason precision farming has been used for assessing field conditions. EC a technique for describing soil spatial variability is used for soil data acquisition. Soil sampling provides the data used to make maps of the spatial patterns in soil properties. Maps are then used to make recommendations on the variation of application rates. The main purpose of the authors in this study was to generate variability map of soil EC a within a Malaysian rice cultivation area using VerisEC sensor. The EC a values were compared to some soil properties after delineation. Measured parameters were mapped using kriging technique and their correlation with soil EC a was determined. Through this study the authors showed that the EC sensor can determine soil spatial variability, where it can acquire the soil information quickly.

Keyword: Precision farming; Site-specific; Spatial variability; VerisEC sensor.