

Web Based Solution for Soil Analysis in Agriculture

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Abstract

Soil analyzer is a web based system that can analyze soil samples primarily based on color and deliver information on the suitability of the soil for cultivating different kinds of plants and crops. The system will be of immense benefit to users who have only a little knowledge about *agriculture*. The use of proper soil is crucial for the healthy growth of plants and for a good harvest. *Sri Lanka* has a diverse geography and a wide variety of soil *types*. The research carried out reveals that the *Image Processing* together with *Geographic Information* can be deployed *to improve the quality of the cultivation process* by recommending the proper soil type to be used by the potential users for specific crops. The key concept of the Soil Analyzer gathers around the color of the soil. The color of soil is influenced by its organic matter content, moisture, its mineral compositions and degree of oxidation. *This system interacts with users through a user friendly web application. Users can upload the images of the soil samples and the other inputs required* by the system *easily*. The system analyses those pictures of soil samples by using image processing techniques and uses stored data sets to infer about the suitability of the soil for growing different varieties of plants and crops. This alleviates *the tedious process of* laboratory testing of *soil sample*s with a sufficient level of accuracy and narrows down the time consumption to a minimum. *This paper demonstrates a brief review about the problem addressed, the approach, the technologies adapted* , *the design and the implementation of the soil analysing system.*