

# **A SMART PHONE-BASED FIELD DIAGNOSIS GUIDE FOR FARMERS**

by

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# A SMART PHONE-BASED FIELD DIAGNOSIS GUIDE FOR FARMERS<sup>1</sup>

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## ABSTRACT

Despite the variety of agricultural extension approaches which include IT-based approaches, the majority of farmers in India are not acquiring the actionable agricultural information. Farmers are facing difficulty in acquiring actionable agricultural advice in a real-time manner from call centers and web portals due to communication and perceptual issues. The radio, video, SMS and voice-based services push generic information to farmers. The farm specific advisory systems like eSagu suffers from scalability issues. By exploiting the latest developments data science and smartphone technologies, there is an opportunity to build a system to enable the farmer in identifying the crop problem and getting the agro-advice. To enable the farmer to get the actionable agro-advisory, we are making an effort to build a smart-phone based *Field Diagnosis Guide (FDG)* (or *Crop Darpan*) by exploiting the progress in data science and mobile phone technology. It is assumed that the farmer possesses a smart phone with Internet connection and visits the field. The basic idea of *Crop Darpan* is as follows: A field problem is a combination of a set of visual perceptions. The farmer identifies the visual perceptions of the field problem through smartphone, and identifies the field problem and acquire the agro-advice. The methodology to develop *Crop Darpan* is as follows. Being semi-literate, a farmer is able to identify the generalized visual perceptions (or symptoms) of the crop. The low-level visual perceptions of field problems of the given crop can be collected from subject matter specialists. The proposed *Crop Darpan* contains an hierarchy of visual perceptions of field problems that consists of generalized, middle-level, and lower-level perceptions. The *Crop Darpan* helps the farmer to identify the field problem by confirming the corresponding low-level perceptions and acquire the agro-advice. A prototype was built for a Cotton crop ([www.cropdarpan.in](http://www.cropdarpan.in)) in English and Telugu languages. It was found out that the farmers are able to identify the field problem with the *Crop Darpan* system.

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<sup>1</sup> 4th International Conference on Agriculture & Animal Husbandry, University of Hyderabad, Hyderabad, India, August 2019, p. 105.