ANDROID IMPLEMENTATION OF LEAF COLOUR CHART

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Abstract

Fertilizer nitrogen (N) has become the key input in food production. Cereals including rice, wheat, and maize account for more than half of the total fertilizer N consumption in the world. As per estimates 50–70% more cereal grain will be required by 2050 to feed over 9 billion world population. This will further increase demand for fertilizer N at greater magnitude unless the fertilizer N recovery efficiency in cereals is improved. It is only 30–50% by the first crop and not more than 7% by the six consecutive crops. The remaining N is lost from the soil–plant system. The generally followed practice of excessive fertilizer N applications to avoid the risk of N deficiency further reduces this efficiency. Excessive N application causes nutrient imbalances and produces plants that are disease- and pest-susceptible. Low recovery of N is not only responsible for higher cost of crop production, but also for environmental pollution.

The Leaf Color Chart (LCC) is used to monitor leaf N status from tillering to panicle initiation or later, by either of two equally effective options. The decision on which option to use can be based on farmers' preferences and location-specific factors, such as frequency of visits by farmers to their fields and their knowledge of critical growth stages for N application. The fixed-time/adjustable-dose option saves time, and is thus preferred by farmers who have gainful alternative activities. The real-time option is generally preferred when farmers lack sufficient understanding of the critical stages for optimal timing of fertilizer N.

The goal of this project is to implement the above mentioned LCC on the android platform. Android platform gives better implementation over manual operation of LCC. This gives more flexibility to the operation.