# An Android Application for Farmers for Kharif and Rabi Crop Diseases Information

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*Abstract: Today's Smart phones have changed the way people live, work and consume information these days. Different mobile company launch new smart phone continuously by adding newer features. An android is an operating system whose most application is freely available in Android market and also Android operating system is available as an open source for developer also. So in this paper we are presenting the android application that will give the Agriculture crop diseases information to the farmer in an audio format. This application once developed is freely available to user from android market. From android smart phone user can access agriculture information from any where anytime without the need of internet services. As this application provides crop diseases information in audio form using local languages, so it is highly beneficial to local and illiterate farmer. Just by selecting the menu, different crop diseases information will give provided to farmers.*

*Keywords: Android, Agriculture, Kharif crop, Farmer, Crop Diseases , Smart phone.*

## I.    INTRODUCTION

Now a day, the popularity of an Android Smart Phone is increasing very fast. Smart phone becomes the basic need of mostly every one. An android is a one of the smart phone operating system whose mostly applications is available freely on an Android Market. An Android user easily and freely downloads android application. Due to this android features, in our research paper we have combined the concept of Agriculture sector to utilize the maximum benefit of android technology. Here we present agriculture crop diseases information in an audio form so farmer can easily understand what types of diseases is the crop face, How that diseases will be cure, which pesticides is used and how much is used.

Android is an Operating System for mobile device and also a platform to developed key application for the Smart Phone..Java Programming Language is used to develop Android Application by using Android SDK tools and API.

**Android Architecture:** Android provides an open source development platform that offers developers the strength to build extremely powerful applications. Android help Developers to take free advantage of the device hardware, access location information, run background services, divert call and messages, etc.



Fig. 1 Android Framework

For developing key application developers take the advantages of same framework APIs. Application architecture use reusability features of components. Once the application has been published, its capabilities are reuse by other applications. Thus it allows the one component to replace by others components. Below listed all applications are a set of services and systems use in developing this application, including:

✓ To build an application consists of buttons and textboxes used rich set of **Views.**.

✓ The lifecycle of application and navigation back stack is manages by an **Activity Manager** .

✓ Used of telephony services on the device to access information is provides by **Telephony Manager.**

✓. To Control the volume and ringer mode is managed by an **Audio Manager**

✓ To receive intents send by other application into our own application can by managed by Broadcast method of **Broadcast Receiver** service. Using this method events raised by any application can be handle by our application. [9]

Now in our system, we take the diseases information for Kharif (summer, monsoon) and Rabi (winter crops). Then depending upon the crop, various types of diseases information like how that diseases occur, what are precaution required to cure that diseases, which pesticides and in how much quantity is it is apply to the crops, How to apply pesticides are presents in an audio form in our system. After whenever farmer required that information, they just used the system and retrieved it just used the keypad of their android phone.

## II. OBJECTIVES

### 2.1 Primary Objective
The main objective  to  introduce this system is to provide the Kharif (summer, monsoon) and Rabi (winter crops) diseases details information(such as types of diseases , pesticides used, method for  applying pesticides, etc) to the farmers in audio form, free of cost, anytime , anywhere  using  Android smart phone without Internet Service. All video data is in Gujarati Language so, the illiterate farmers of Gujarat can easy operate the system and retrieved data from it.

### 2.2 Secondary Objective
- The secondary objective of designing the system is to develop a mobile based android application that can be used by any user.
- System is so user friendly that a farmer has to select the menu from the mobile and required information is delivered to the farmers.
- Once these Application is downloaded and install in Android phone user can received crop diseased information from anywhere at any time without coverage problem.
- System is provided information in audio format and in Gujarati Language so it is very easy for farmer to protect their crop from various diseases and easy get ride from crop damage problem.

## III. PROBLEM STATEMENT
After completing the intensive study of data following problem are identified:-
- Kharif (summer, monsoon) and Rabi (winter crops) information are provided by the various websites. But all the information is in English Language and in Text form. So illiterate farmers of Gujarat are not able to take advantage of these services.
- To access the website information laptop or personal computer is mandatory
- Using mobile phone, some farmer can access website, but then also constant internet services is required.
- There are some agency like IFFCO Kisan Sanchar Limited (IKSL) and Reuters Marker Light (RML) that provide agriculture information via SMS or call. But they charge money for the usage of their services and also don't work where mobile tower is not available.

## IV. METHODOLOGY
To overcome the limitations mention in problem statement. We have design a system that will provide the Kharif (summer, monsoon) and Rabi (winter crops) diseases information to the farmer using Android phone in form of voice data. It neither required internet services nor it bear the cost of pc/laptop. All the information is provided in Gujarati Language so the literate farmers of Gujarat State can easily operate the system just by dialing numbers from the mobile keypad. No call or SMS charges, it provides free information anywhere and anytime. As the system gets installed on Android phone, tower problem will not be a problem anymore.

### 4.1 System Design Architecture
Below Figure show the System Design Architecture flow chart that will take number as input from the mobile keypad and give Kharif (summer, monsoon) and Rabi (winter crops) diseases information in voice form to the farmers.

We assume that farmer has press 1 as an input, After that  system will again ask user to  input value and provide information base upon the input provided( system provide information about Kharif (summer, monsoon crops) and Rabi (winter crops) diseases). And further allow user to select information from Kharif (summer, monsoon) crop diseases category. Example press 1 for sugarcane diseases information, press 2 for Rice crop diseases information press 3 for Finger Millet(Nagali) crop diseases information and 0 to return to back menu.
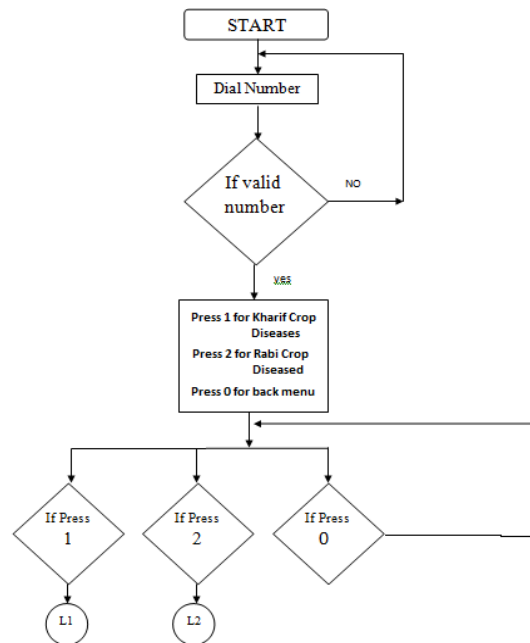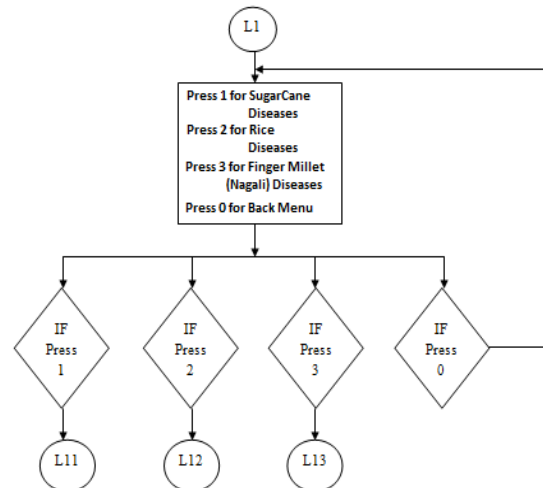
Fig. 2 starting stage of Application

Fig. 3 Selection of Kharif (summer, monsoon) crops Diseases Subcategory

Again we assume that farmer has press 3 as an input, after that system will again ask user to input value and provide information base upon the input provided further information of Finger Millet (Nagali) crop diseases. Examples press 1 for Types of Diseases, press 2 for Precaution for the Diseases, press 3 for pesticides used to cure the diseases and 0 to return to back menu.
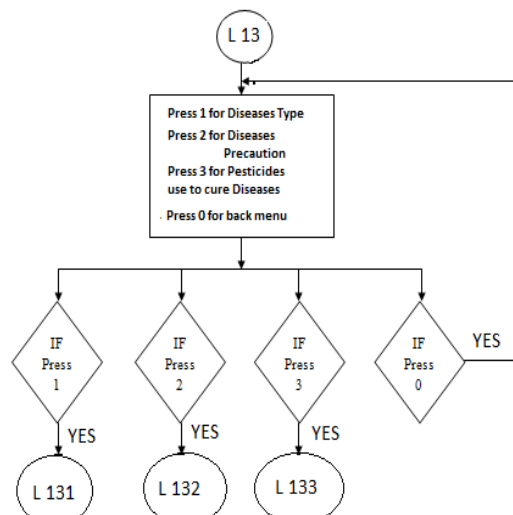
Fig. 4 Selection of Finger Millet (Nagali) Crop Information

Now assume that farmer has press 2 then system provides details information about of the precaution of all diseases with affect the Finger Millet (Nagali) Crop.
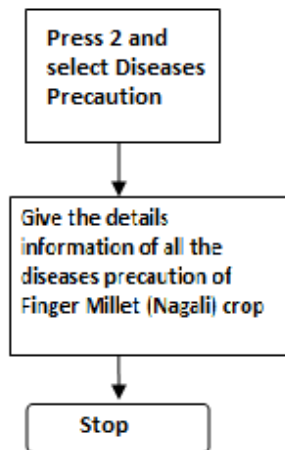


Fig. 5 Details Information of all the finger millet (Nagali) crop diseases precaution

Above whole process is repeated for Rabi crop also.

## V.    CONCLUSION

From the above study it is conclude that this system provides all Kharif (summer, monsoon) and Rabi (winter crops) diseases details information(such as types of diseases , pesticides used, method for  applying pesticides, etc)   in Gujarati Language to the illiterate farmers in voice form without used of internet. No cost is required for this system and also it provides information at any time from any location.

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