



INSPESTOR

INSECT PEST DETECTOR ON RICE FIELD

**A USER MANUAL FOR THE
INNOVATIVE MOBILE APP
REVOLUTIONIZING PEST
MANAGEMENT IN
AGRICULTURE**

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INSECT PEST IDENTIFICATION APP WITH PRESCRIBED
PESTICIDE ON RICE FIELDS USING SSD MOBILENET MODEL
ON DEEP LEARNING

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Frequently Asked Questions (FAQs)

Can the app detect all types of insect pest?

No. The Inspestor application can only detect six types of insect pests. These are Rice Bug, Rice Black Bug, Rice Grain Bug, Brown Planthopper, Green Leafhopper, and Leafhopper.

Is the application available for iOS?

No. Inspestor application is only available on Android devices.

Is Inspestor free to download and use?

Yes. The Inspestor application is free to use and download for everyone that can meet the app's system specifications.

Do I need internet in order to use the app?

No. Internet is not required in order to use the application.

How many pesticides you recommend on each insect pest?

The app provides a maximum of five recommended pesticide with specific active ingredients and brand names that is commercially available in the market.

Where do you store our user data?

Since the app is offline, it does not store any user data. Moreover, the app does not require users to sign up or log in so anyone can use it.

DISCLAIMER

The information provided by the Inspestor mobile application has been sourced and verified by the Department of Agriculture and the Fertilizer and Pesticide Authority. However, it is important to note that despite our efforts to ensure accuracy, we cannot guarantee the absolute correctness, adequacy, validity, reliability, availability, or completeness of the information on our mobile application.

We do not make any explicit or implied representation or warranty regarding the accuracy or reliability of the information. Therefore, we cannot be held liable for any loss or damage of any kind that may be incurred as a result of using our mobile application or relying on the information provided therein.

While the information has been sourced from reputable authorities, it is always recommended to independently verify the information through additional sources before making any decisions or taking any actions based on it. Your use of our mobile application and your reliance on the information contained within it are solely at your own risk.

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a section that provides users with ways to get in touch with the developers regarding the mobile app or any related matters.

TROUBLESHOOTING

Experiencing problems with Inspektor? Choose a scenario you are currently experiencing and follow the steps that may solve the problem.

A. The application keeps crashing

The application supports only Android 7 version and above. If the application keeps crashing, please make sure to update your android version.

1. Uninstall the current application

2. Update android version

3. Install Inspektor again

B. The application system lags, or delay response

Users may experience delay response this may cause by phone low storage. Clearing the application cache may help the system lag problem.

INTRODUCTION

Inspesor: A mobile application that uses deep learning algorithms and image recognition technology that aims to assist farmers to detect and identify insect pest on rice fields. Once detected, Inspesor can recommend the most effective pesticide to use, helping farmers to better manage their crops and get the best yield possible.

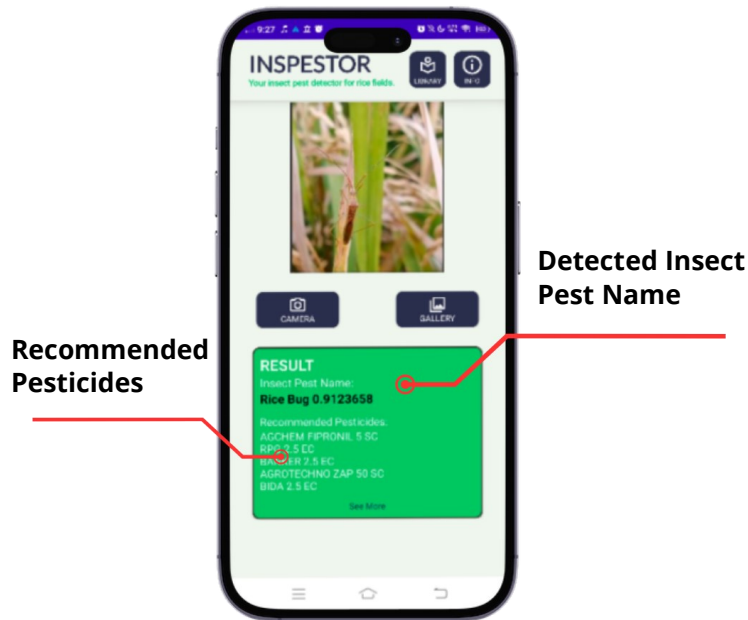
INSTALLATION

- Download the Inspesor APK file at <https://bit.ly/3JeQsyr>
- Install the file, an alert dialogue will ask for permission to install unknown sources, click "Allow" or "OK". This will allow the application to be installed.

USER PRIVILEGES

Following features can be availed by the user,

- View name of the captured insect pests
- View recommended pesticides on the output
- View lists of the insect pest on the Library button
- View Insect Pest details on the Pest Information button



After clicking "Ok," the app analyzes the photo and identifies the insect pest. You'll then see the "Home" screen with the captured image, pest information, confidence level, and pesticide recommendations in the "RESULT" section. Tap "See More" to access detailed information about the insect pest, including active ingredients and recommended pesticides. You'll be directed to the "LIBRARY" button for this.

SYSTEM REQUIREMENTS

Minimum Mobile Hardware Specifications

Android version: Android 7 , API level 24

Camera MP: 13 MP

System type: Android

CPU: At least 1.25 Ghz

RAM: 3 GB

Current Mobile Hardware Specifications

Android Version: Android 7 to 12 API level 24-32

Camera MP: 13MP to 48MP

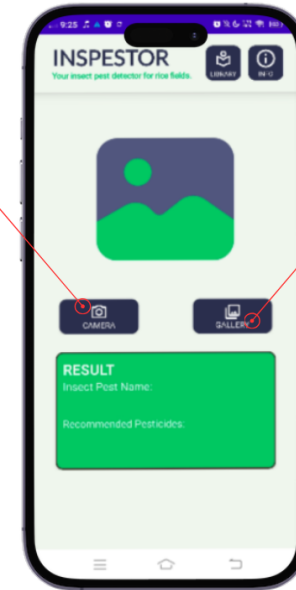
System type: Android

CPU: 1.25 GHZ to 2.0 GHz

RAM: 3GB or 8GB

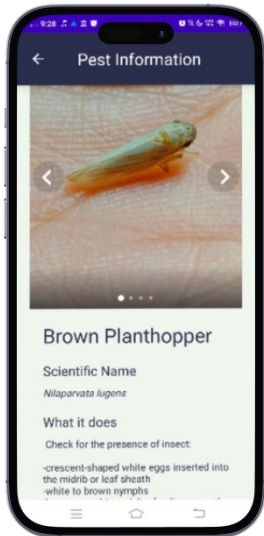
Camera

Tap "CAMERA" to take insect pests photos with your phone's camera. View the captured image. Click "Retry" for a better shot or "Ok" to proceed.



Gallery

After selecting the "GALLERY" button, you will be directed to your device's album or gallery. From there, you can choose any picture and upload it.



Clicking insect pest in the library takes you to the "Pest Information" tab. It displays the pest's scientific name, behavior, recommended pesticides, active ingredients, and pest management details.

Tap "INSTRUCTIONS" for easy-to-follow steps on using the app to capture photos and achieve accurate results.



Software Development Requirements

Training and development process of the system, the researchers used Google Colab Pro running on a desktop with a hardware specification of CPU: AMD Ryzen 5 2400G with Radeon Vega Graphics, GPU: NVIDIA GeForce GTX 1060 6GB VRAM, RAM: 16 GB, and Storage: 2TB HDD.

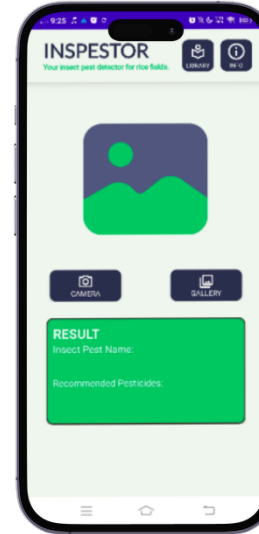
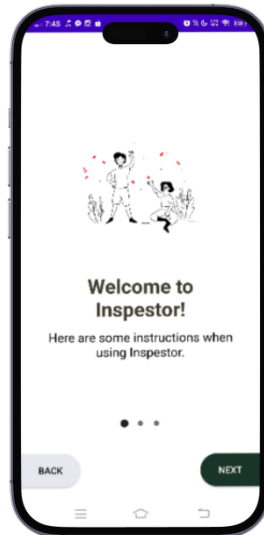
While in designing the user interface and overall layout of the mobile application, the researchers used an android studio running with a laptop with AMD Ryzen 5 3500U with Radeon Vega Mobile Gfx 2.10 GHz, installed RAM 16.0 GB (13.9 GB usable), system type 64-bit operating system, and x64-based processor.

GETTING STARTED



Inspestor: A mobile app employing deep learning and image recognition to detect and identify insect pests in rice fields, providing farmers with recommendations on the most effective pesticides for optimal crop management and increased yields.

The app logo will flash, followed by a helpful onboard screen with instructions on how to use the app. Use "NEXT" or "BACK" buttons to navigate.



After the onboard, you will be directed to "Home" screen and you can capture/upload an image using your phone's camera/gallery. It will then provide an insect pest and pesticide information in the "RESULT". You can explore the "LIBRARY" and "INFO" sections too.

The "LIBRARY" button shows the app's list of detectable insect pests. Click each button to learn about them, including the recommended pesticides and its active ingredients.

