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1. Introduction

**mrittikā** is a soil nutrient analysis and recommendation software developed by Grameen Intel Social Business Ltd. Rural entrepreneurs can offer soil testing services to the farmers and use mrittikā to analyze the results to recommend fertilizers to the farmers for achieving cost effective and optimum productivity.

mrittikā offers knowledge based and customized information to the farmers on:

- Required nutrients based on specific crops and current state of the soil
- Specific fertilizer types, quantity, dosage and application procedure
- Local sources of fertilizers offering competitive prices

Features of mrittikā include:

- Bringing expert advisory services of crop and soil based nutrient selection to the doorstep of the farmers
- Maximizing yield and improving quality of the harvest
- Simplifying selection and sourcing of the fertilizers
- Enabling farmers to save money by reducing wastage and harmful effects from using excess fertilizer

2. **mrittikā** client application user guide

This section includes step-by-step instructions for using the **mrittikā** client application.

2.1 eHub ID – first run

After successful installation, the application will need a ehub ID for authentication during the very first run (Fig 1.1). Please make sure you are connected to the internet and you have collected your ehub ID. Press ![Login](image) and mrittikā will synchronize with the server.

**Note:** This connection process may take a while to complete and the window in Fig. 1 will only appear during the first time the application is run.
2.2 Adjusting Settings

Please find below the step-by-step instructions to adjust the local settings. In the settings menu user will be able to add supplier, add stock and will configure their own settings for the software.

2.2.1 Add Supplier

Click the settings button from the top right and select “Supplier Information”. You will be asked for authentication to enter into the settings module. Use the passcode provided to you by your IT support person and click “Login”. (Fig. 2.1) In “Supplier Information” module you can add a fertilizer supplier by filling out the form with necessary information and click (Fig 2.2) A confirmation message will pop up if the record has been saved successfully. Click “Yes” and proceed.

Note: You can change this default passcode from the general settings module.

2.2.2 Add Stock:

The very next page will give you the options to add stock for that particular supplier you have just added to the system. Fill out the information, one by one, and click (Fig 2.3). A confirmation message will be shown afterwards.
The application will then take you to the stock list for that particular supplier where you can use the “Add More Stock” button to continue adding more stock for that particular supplier (Fig 2.4). If you click “Save & Add” you will get the options to add more stock for that particular supplier.

You can view all the existing suppliers by selecting “Supplier List” from the tab and you can view and update any supplier information (Fig 2.5) and stock, as well, by pressing the “View” button in supplier list (Fig 2.6).

The figure on the right shows the supplier list; the user can view and select different brands of fertilizers as per supplier.
Under the **Stock Information** tab you will be able to view stock list for all the suppliers, and by selecting **View** you can update, save and/or delete a particular stock for that supplier; and you can continue adding more stock (Fig 2.7).

### 2.2.3 General Settings

Click on **General Setting** from top-left and you will find the **eHub Setting** under this option, where you will be able to update your basic information (Fig. 2.8). You can update any information and press **Save** to confirm the changes.
For Changing Passcode settings click on the “Change Passcode” tab and provide old Passcode and the new one. After that click on the “Save” button to save the new settings. (Fig. 2.9)

To view and configure the timing and frequency of updates and upload data, select “Synchronization” under the General Setting tab. Please choose “Automatic mode” for updates on a daily, weekly or monthly basis, and select the time at which data will be sent or received and click “Save”. Choose “Manual mode” if you would like to connect to the central server and transfer data (Fig. 2.10), and click “Sync with Server”. Please wait, while the synchronization process completes.

When synchronization process starts, you will see the message “Synchronizations is processing”. Upon a successful synchronization, you will see “Logic Update: Successful, Data Sync: Successful, Latest Version: Yes”.

Note: You must connect to the internet to complete a synchronization process.
Under the General Setting tab you can change the “Email Template” (Fig 2.11) and view “Sent Mail List” (Fig 2.12) as well.

Under General Settings tab you will find an option to select “Email template” to customize the email that will be sent to the supplier after recommendation.

You can add, append, edit or delete any text inside that box. You can reset the template to previous saved value using the “Reset” button.

**Note:** Please keep in mind that word starting with ‘$’ are variable name and will be replaced with real data in the email.

You can view all the mails that have been sent to the supplier so far by clicking on “View Sent Mail” list under the general settings tab. You can click on the “View” button to see the email in details.

### 2.3 New Recommendation

To get a new fertilizer recommendation click on the recommendation button in the top-right. This will take you to the very first screen of mrittikā. Click on the blue **New Recommendation** button to start the process. (Fig. 2.13)
2.3.1 New Farmer Registration

Please provide the information of the new farmer seeking recommendation. After filling out the information click on the button on the right to proceed to the next step. (Fig. 2.14)

Select the type of Crop, Land, Irrigation, and Season from the options given in the drop down menu by clicking over it. After providing all the inputs click the right arrow button for the next step.

Fig. 2.14

Fig. 2.15
2.3.3 Soil Test

To get a better recommendation it is advised to perform soil test. If the farmer has done soil test, select ‘Yes’. Choosing ‘No’ will directly yield a recommendation using a default average value. (Fig. 2.16)

2.3.4 Soil Test Findings

Now the application will require the input from the soil test results. pH, organic carbon, phosphorus, potassium and calcium are required for a recommendation. You can give inputs by clicking over the drop down of each particular value.

High, Low, Neutral, and Numeric are available options for particular soil content. Keeping the mouse over these options will provide a tip about the particular option. (Fig. 2.18)

You can always go back and readjust those values using the back button.
2.3.5 Recommendation

After taking all the necessary inputs of soil test mrittikā will give three recommendations to the farmer. First one is a summary recommendation, followed by a detailed recommendation; and finally a dosage recommendation will be shown.

2.3.5.1 Summary Recommendation

Summary recommendation will provide an overview about the complete recommendation (Fig. 2.19). You can click on the right arrow to go to detailed recommendation, or you can click on detailed recommendation button. You can print the summary recommendation by using print button  and you can preview the copy that will be printed by using preview button  .

2.3.5.2 Detailed Recommendation

Detailed recommendation will provide Basic Info, Soil Report, Fertilizer Info, and Supplier Info, step by step (Fig. 2.20). You can print the detailed information using print button and you can also email the supplier by using email button if the supplier has an email address that has been entered in the supplier information details.

Sending an email to the supplier will create a new record in “Sent Mail List” module under General Setting tab.
2.3.5.3 Dosage Recommendation

At the end of the detailed recommendation you can either go to the homepage for new recommendation using recommendation button or you can view the dosage recommendation by clicking the button. Dosage recommendation will break down the complete recommendation into Basal, 1st top dressing and 2nd Top dressing. You can print out the dosage recommendation as well or you can click and go to the homepage for new recommendation.

Fig. 2.21

2.3.6 Recommendation for existing farmer

For providing recommendation to an existing farmer enter the farmer’s name in the search box at the very top of the first page(Fig. 2.22) and click the search button. The next page will yield a result with the best possible match. (Fig. 2.23)

Now you can click “View” (Fig. 2.23) to get the “Recommendation Button” for that particular farmer or can get a new recommendation for that farmer using previous data.(Fig. 2.24)
Conclusion

Grameen Intel Social Business Ltd. hopes that you will have an enhanced user experience in operating mrittika. The software has already been tested in various locations in India and Bangladesh, and has been successful in increasing the yield of farmers and putting smile on their faces.

Should you require any form of assistance, please get in touch with our customer support personnel, by sending your queries to the following email address @ support@grameen-intel.com.

We look forward to your feedback.