

Urea Prediction System Using Fuzzy Logic

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Abstract- Now a days People want to use advance technology in farming but they have less knowledge in technology. Its very difficult to people for understand the technology or proper way to do E-farming. Choosing an organic fertilizer can be difficult, as nutrient ratios, nitrogen availability, ease of use, and cost can vary widely among materials. This Urea prediction system can help farmers to save time and money and avoid excessive or deficient fertilizers. Farmer will simply compare the value, nutrient price, and gas availableness of organic materials and arrange the foremost balanced and cost-effective fertiliser program for farm. the most objective of this project is to make AN application which is able to facilitate farmers to make a decision the desired quantity of fertilizers for his or her farm. The carbamide prediction system covers the utilization of inorganic fertilizers, generally stated as business or chemical fertiliser, to provide the main crop nutrients N, P₂O₅, and K₂O. These nutrients can also be provided from organic sources such as manures. Fertilizers contain different amounts of nutrients, affecting the amount of the fertiliser you need. The nutrients are often written on the bag or packing slip as percentages, or as N:P:K (nitrogen:phosphorus:potassium). In this application we are using MATLAB(matrix laboratory). MATLAB is multi-paradigm numerical computing environment and fourth generation programming language. The project are implementing using fuzzy logic. Fuzzy logic is a sort of computer logic that is different from boolean algebra. It is different in the way that it allows values to be more accurate than on or off. While boolean logic only allows true or false, fuzzy logic allows all things in between. fuzzy logic is a form of many valued logic in which truth values of variables may be any real number between 0 and 1, considered to be "fuzzy". Fuzzy logic has been employed to handle the concept of partial truth, where the truth value may range between completely true and completely false. Application generates a description for farmers to buy required quantity of fertilizers.

Keywords: Fuzzy logic, Fertilizers, NPK.

I. INTRODUCTION

The traditional farming is the very big problem in today's farming success. All farmers can try to survive In the town of Latest farming methodology. All farmers can try to use the latest technology in traditional Farming but due to less knowledge in advance farming methods, it's going more difficult to get success. As per the advance technology evolve in farming, farmers can do research in their field and also take their decisions Using given Information Tools. As per the need of IT in this field is concern, we are going to implement a Such software which help farmer to take their fertilizer requirement for particular crop. Farmer can use the soil report details in the application proposed, and it will react the requirement of fertilizers. This is Decision making software, helps farmer to understand the appropriate need of fertilizer's for particular crop. The given working is tested by using research laboratories of Agricultural Institutes.

The Urea Prediction is an application which is developed for Quantity and Cost Generation of fertilizer's; the overall Calculations are dependent on the fixed values which use for quantity generation. As per the information Provided by Mahatma Phule Krishi Vidyapitha's Research persons, Any Crop is dependent on fixed value Nitrous, Phosphate and Potassium and as per the conditions of Indian farm, their issue to traditional farming In previous years, it was very harmful which cases the loss of quality of Farm; this loss is in the form Of variation in Nitrous, Phosphate and Potassium. As per the scientific Farming methodology, Science proves that any Crop required a constraint Nitrous, Phosphate and Potassium. The fertilizer's we use to balance the Requirement of Nutrients. Urea Predictor Application is developed for Agricultural Department which is located at local places in Villages under the Government ablated once where the farmers can Test the Soil for Nitrous, Phosphate and Potassium. As per the available Nutrients in farmer's farm, Urea prediction application can generate the requirement of Nitrous, Phosphate and Potassium as per the Crop wanted to take by farmer in His farm. This Application can generate the Fertilizer's Requirement

to full filled the Required Nutrients to take crop in farm. Using this application, Experience persons or Soil Testing occurs can suggest or Guide Farmers about Crop is beneficial or not. Also if farmer wish to take crops farming application can generate The Nutrient requirement as per the organic or chemical Fertilizers. Using the generated Fertilizer's quantity Application can generate the approximate cost of fertilizers which help to decide farmer to use a type of Fertilizers.

II. LITERATURE SURVEY

Andrews and Prof. J. Foster [3] Fertilizer Calculator A tool for comparing the cost, nutrient value, And nitrogen availability of organic materials. Choosing an organic fertilizer can be difficult, as nutrient ratios, nitrogen availability, ease of use, and cost can vary widely among materials. This Urea prediction system can help farmers to save time and money and avoid excessive or deficient fertilizers. Farmer can easily compare the cost, nutrient value, and nitrogen availability of organic materials and plan the most balanced and cost-effective fertilizer program for farm.

Prof.Rory Maguire, Prof.Mark Alley, Prof. W. G. Wisner [1] Fertilizer Types and Calculating Application Rates. Crop production has increased dramatically over the last few decades, much of which has been due to the widespread introduction of chemical fertilizers starting in the mid-1900s. Matching fertilizer application rates to crop needs is an essential component of optimizing crop production. However, different crops in separate fields will require varying rates of the major nutrients nitrogen (N), phosphate (P₂O₅), and potassium (potash, K₂O) due to variations in soil types, soil test phosphorus and potassium levels, and nutrient ranges of different crops . This publication covers the use of inorganic fertilizers, sometimes referred to as commercial or chemical fertilizer, to supply the major crop nutrients N, P₂O₅, and K₂O. These nutrients can also be provided from organic sources such as manures.

Rory Maguire [2] Selecting Fertilizer Type, Timing, and Method of Applications In order to calculate a fertilizer application rate. Phosphate and K₂O can be land-applied at any time, but normally it is more cost-

effective to apply at the same time as N. However, N is more mobile than P₂O₅ and K₂O in the soil and should be applied as closely as possible to the time of crop uptake. Nitrogen in the form of nitrate can be lost from soils via leaching and can be denitrified to N gas in reducing conditions, such as soils saturated with water.

Prof.Carol Rose, Prof. Extension [4] Fertilizers contain different amounts of nutrients, affecting the amount of the fertilizer you need. The nutrients are often written on the bag or packing slip as percentages, or as N: P: K: S (nitrogen:phosphorus:potassium:sulfur). Application generates a description for farmers to buy required quantity of fertilizers. Most of the values provided in the calculator are estimates from generic materials available in Oregon. Many organic materials, especially manures and compost, have highly variable nutrient contents, so we recommend using analyses for the materials you are considering.

III. SYSTEM ARCHITECTURE

Connection Establish between database and GUI: The entire database is stored into the database in the form of rows and column because mat lab stored the data in the form of matrix. We cannot access the database directly because there is connection needed to access the data.

There are two types of users of our system .i.e. admin and user. Admin can add, view record of dataset.

User login and enter the NPK test details into form fields. After completing the form, he/she submit the request. After submission button click he/she will get the required amount of urea in Kg.

Protecting the Database (Administrative right): We can use password facility for protecting Database. Only authorized person who having all right for Accessing data only access this Data. User Privilege: Our project provides full User privilege (All Right). Administrator having all the right to update deletes the information. The administrator is only person who can update the fertilizers cost and the other Farming related information. And the other optional user is only access the application he cannot update or delete the information .User only edit itself database into the application.

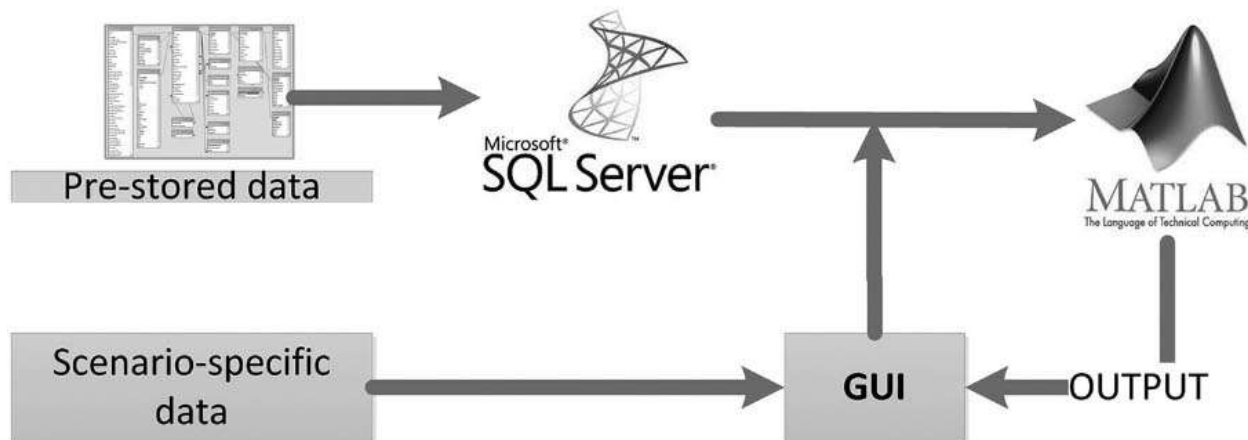


Fig 1: System Architecture

IV.CONCLUSION

This application is helpful to farmer to use for unnecessary fertilizers and farmer paid appropriate cost of fertilizer. And this application helps the farmer to increase the production of crop in limited Fertilizer and limited cost. The development of Farming field is the great challenge. IT can help to improve the agricultural field by providing a support for cost control and to decide a proper quantity of fertilizers. IT makes soil report more understandable to farmer.

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