DATAFLOW DIAGRAM

FERTILIZER RECOMMENDATION SYSTEM FOR DISEASE PREDICTION

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

OBEJECTIVE:

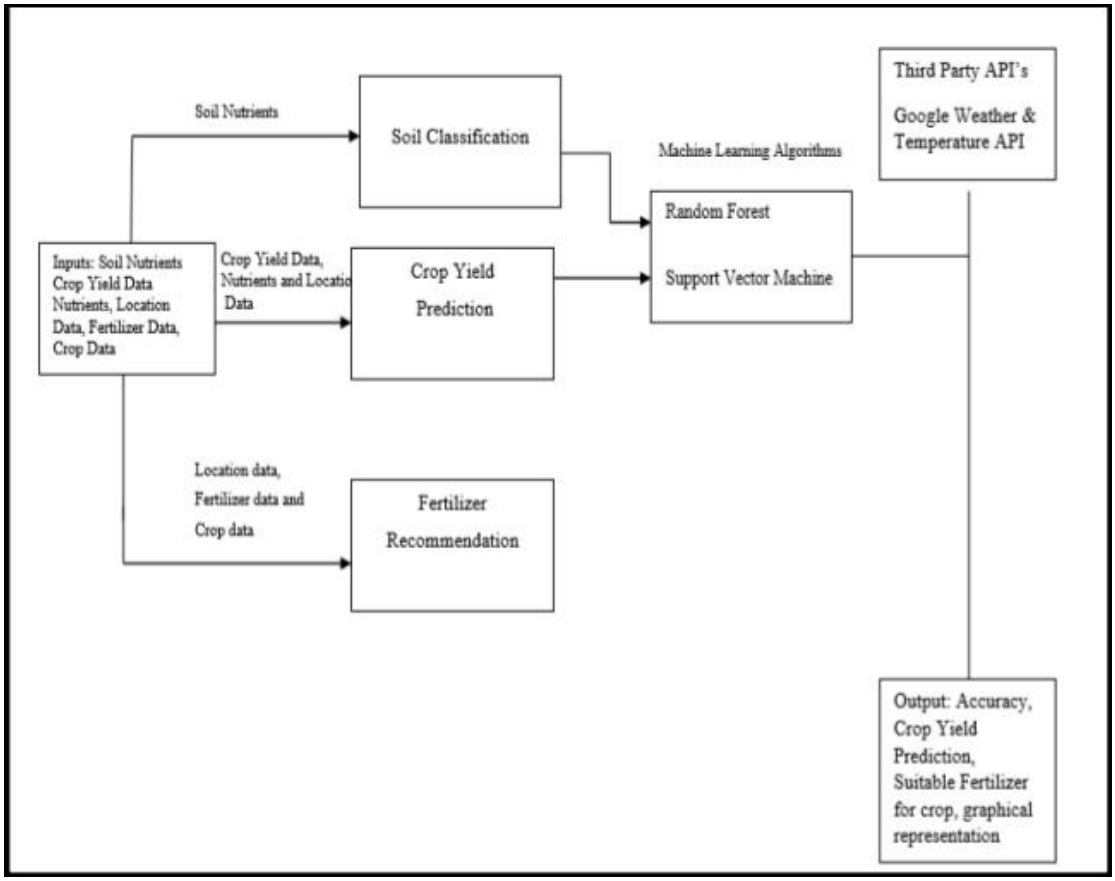
There are 3 steps in proposed work.

1) Soil Classification: Soil classification can be done using soil nutrients data. Two Machine learning algorithms used for soil classification are Random Forest and Support Vector Machine. The two algorithms will classify, and display confusion matrix, Precision, Recall, f1-score and average values, and at the end accuracy in percentage as output

2) Crop Yield Prediction: Crop Yield Prediction can be done using crop yield data, nutrients and location data. These inputs are passed to Random Forest and Support Vector Machine algorithms. These algorithms will predict crop based on present inputs.

3) Fertilizer Recommendation: Fertilizer Recommendation can be done using fertilizer data, crop and location data. In this part suitable crops and required fertilizer for each crop is recommended.

DATA FLOW DIAGRAM:



Figures (Fig 2) shows soil classification using Random Forest algorithm and Support Vector Machine. The output of these algorithms shows confusion matrix as summary of algorithms different parameters like Precision, Recall averages and accuracy in percentage.

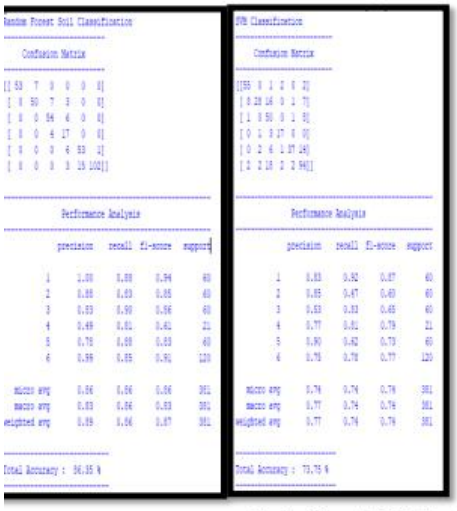


Fig 2. RF and SVM Classification

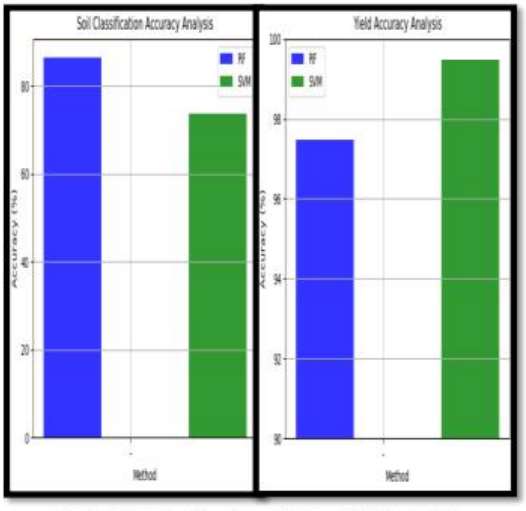


Fig 3. Soil Classification and Crop Yield Analysis

Fig 4.Yield Prediction using RF and SVM

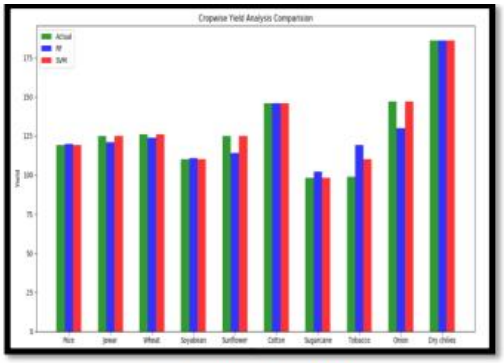


Fig 5. Crop Wise Yield Analysis

Crops	Actual	RF	SVM	RF_Err	SVM_Err	RF_Ac	SVM_Ac
Rice	119	120	119	0.41841	0	99.5815	100
Jowar	125	121	125	1.62602	0	98.3739	100
Wheat	126	124	126	0.8	0	99.2	100
Soybeans	110	111	110	0.45249	0	99.5475	100
Sunflower	125	114	125	4.60251	0	95.3974	100
Cotton	146	146	146	0	0	100	100
Sugarcane	98	102	98	2.0	0	98	100
Tobacco	99	119	110	9.17431	5.26315	90.825	94.7368
Onion	147	130	147	6.13718	0	93.862	100
Dry chilli	186	186	186	0	0	100	100
Avg Accuracy						**97.48**	**99.47**

Table 1. Crop Yield Analysis