

Summary: Nearly all reviewed studies on crop recommendation systems rely on datasets specific to Indian agricultural conditions. This consistent use of Indian-based datasets, even in studies aimed at other regions like Bangladesh, highlights a significant gap in model adaptability for different local environments. Most models integrate soil parameters (e.g., NPK levels, pH, moisture, weather condition).

Paper 1: [\(PDF\) An artificial intelligence solution for crop recommendation \(researchgate.net\)](#)

March 2022

Key Points :

- ✓ Indian soil based
- ✓ Parameters - nitrogen, phosphorous, potassium (NPK), pH, organic carbon, moisture content and few more things are considered.

Keywords: Deep Learning, Deep neural network, Machine learning classifiers, NPK, Prediction

Paper 2: [\(PDF\) A Web Based Crop Recommendation System Using Various Machine Learning Algorithms \(researchgate.net\)](#)

February 2024

Key Points:

- ✓ Parameters - Nitrogen(N), Phosphorous(P), Potassium(K), pH, Humidity, Rainfall and temperature.
- ✓ 20 unique crops.
- ✓ \*\*\*Indian condition base (Although it is not mentioned on the paper)

Paper 3: [\(PDF\) Crop Recommendation System \(researchgate.net\)](#)

October 2020

Key Points:

- ✓ Parameters - temperature, humidity, soil pH, sunlight, and soil moisture
- ✓ Sri Lanka based

Tools/ Algorithms: Arduino microcontrollers, Naïve Bayes, SVM, K-means Clustering , Sentiment Analysis

Paper 4: [\(PDF\) Smart Cultivation and Prediction System for Agriculture \(researchgate.net\)](#)

January 2020

Key Points:

- ✓ Indian condition.
- ✓ Parameters - soil temperature, soil moisture, NPK, pH are used for monitoring temperature, humidity, soil moisture

Paper 5: <https://www.inderscience.com/info/inarticle>

January 2023

Points to be noted:

1. Although it is said that the work is for Bangladesh, but the dataset they've used is based on Indian weather condition.

**Context**

This dataset was build by augmenting datasets of rainfall, climate and fertilizer data available for India.

2. Some additional things are there like cost calculation, fertilizer recommendation.

Paper 6:

<http://dspace.daffodilvarsity.edu.bd:8080/bitstream/handle/123456789/9619/22170.pdf?sequence=1&isAllowed=y>

Key Points:

- ✓ Predicts the yield of the harvest.

Paper 7: A Machine Learning-Driven Crop Recommendation System with IoT Integration

2024 6th ICEEICT

02-04 May 2024

Key Points:

- ✓ Dataset was taken from kaggle which one was made by augmenting datasets of rainfall, climate and fertilizer data available for India.

Paper 8: A Web-Based Agriculture Recommendation System using Deep Learning for Crops, Fertilizers, and Pesticides

Key Points:

- ✓ Indian authors, Indian dataset(same).

Paper 9: Agricultural Crop Recommendation System

2023 3rd International Conference on Intelligent Technologies (CONIT) Karnataka, India.

23-25 June, 2023

Key Points:

- ✓ Indian authors, Indian dataset(same).

Paper 10: Agriculture 4.0 in Bangladesh: Issues and Challenges

2022 14th International Conference on Software, Knowledge, Information Management and Applications (SKIMA)

Key Points:

- ✓ Not exactly relevant.

Paper 11: AGROFERDURE: Intelligent Crop Recommendation System For Agriculture Crop Productivity Using Machine Learning Algorithm

Key Points:

- ✓ Indian authors, Indian dataset(same).

Paper 12: RSF: A Recommendation System for Farmers

2017 IEEE Region 10 Humanitarian Technology Conference (R10-HTC)

21 - 23 Dec 2017

Key Points:

- ✓ Not used ML things to predict, rather used predefined databases and algorithm to predict crops.

Paper 13: Light GBM Algorithm based Crop Recommendation by Weather Detection and Acquired Soil Nutrients

2022 International Conference on Power, Energy, Control and Transmission Systems (ICPECTS)

Key Points:

- ✓ Indian authors, Indian dataset(same).

Paper 14: Digital Revolution in the Agriculture Based on Data Science

2022 2nd Asia Conference on Information Engineering (ACIE)

Key Points:

- ✓ Not exactly relevant.

Paper 15: Design and Development of a Smart Agriculture (SA) System with Machine learning-based IoT Architecture

2023

Key Points:

- ✓ Mainly worked on disease detection through DCNN.

Paper 16: Crop Recommendation Based on Soil Properties: A Comprehensive Analysis

2023

Key Points:

- ✓ Indian authors, Indian dataset(same).

Paper 17: Crop Recommendation and Yield Production using SVM Algorithm

Proceedings of the Sixth International Conference on Intelligent Computing and Control Systems (ICICCS 2022) IEEE

Key Points:

- ✓ Indian authors, Indian dataset.

Paper 18: Crop Prediction & Fertilizer Recommendation using AODE Algorithm

2024 IEEE 9th International Conference for Convergence in Technology (I2CT) Pune, India.  
Apr 5-7, 2024

Key Points:

- ✓ Indian authors, Indian dataset.