AI-Based Crop Disease Detection System

- Smart Agriculture Using Image Processing

Introduction

- Agriculture is the backbone of India
- Crop diseases reduce yield and profit
- Farmers struggle to identify diseases early
- Need for smart technology solution

Problem Statement

- Farmers cannot detect diseases at early stage
- Lack of expert guidance in rural areas
- Incorrect fertilizer usage
- Financial losses due to crop damage

Proposed Solution

- Farmer uploads crop image
- AI detects disease
- Suggests treatment
- Recommends fertilizer
- Generates PDF report
- Saves prediction history

Objectives

- Early disease detection
- Reduce crop loss
- Provide treatment guidance
- Support Kannada language
- Digital report generation

System Architecture

1. Image Upload
2. Disease Detection
3. Treatment Mapping
4. Fertilizer Recommendation
5. PDF Report Generation
6. History Storage

Technologies Used

- HTML
- CSS
- JavaScript
- jsPDF Library
- Local Storage

Multi-Language Support

- English
- Kannada
- Language Toggle Option
- Easy for local farmers

Image Upload Module

- Upload crop image
- Preview image
- Detect disease button
- Attractive UI design

Disease Detection

- • Leaf Spot
- • Rust
- • Blight
- • Confidence percentage displayed

Treatment Suggestion Mapping

- English treatment suggestions
- Kannada treatment suggestions
- Disease-based recommendations

Fertilizer Recommendation

- Balanced NPK
- Potassium-rich fertilizer
- Nitrogen control
- Based on disease detected

PDF Report Generation

- Auto-generated report
- Includes disease name
- Confidence percentage
- Treatment & fertilizer
- Download option

Prediction History

- Stores previous results
- Displays disease & confidence
- Helps farmer track issues

Advantages

- Early detection
- Reduces crop loss
- Easy to use
- Supports regional language
- Digital documentation

Future Enhancements

- Real AI model (TensorFlow)
- Live camera detection
- Cloud database storage
- SMS alert system
- Government integration

Impact on Farmers

- Improves productivity
- Saves money
- Increases awareness
- Promotes smart agriculture

Conclusion

AI-based crop disease detection helps farmers:

- ✓ Identify diseases early
- ✓ Apply correct treatment
- ✓ Use proper fertilizer
- ✓ Increase crop yield

Thank You