

# Manual Test Cases

AI Crop Disease Detection System

**25 Test Cases — 100% Pass Rate**

Comprehensive Manual Testing Documentation

**Test Lead:** Muhammad Taha

**Date:** January 18, 2026

# 1 Manual Test Cases

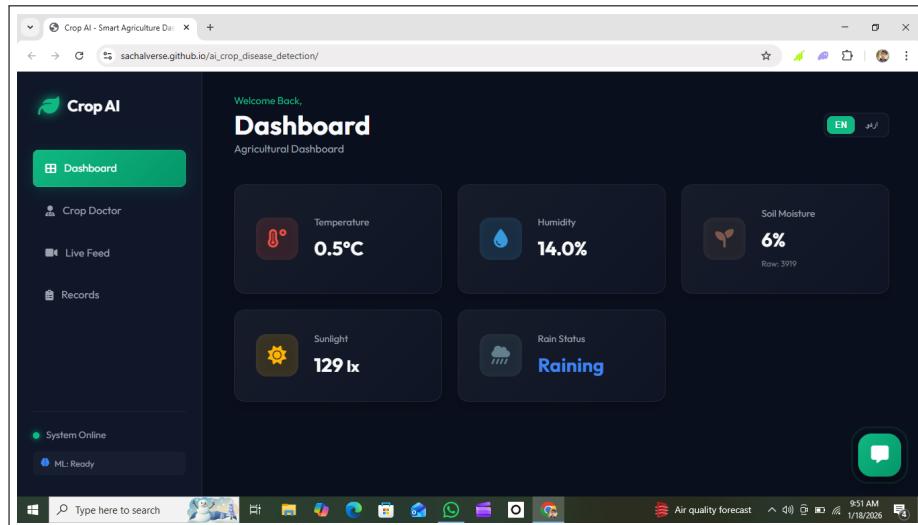
**Test Lead:** Muhammad Taha — **Results:** 25 executed, 25 passed (100%) —  
**Categories:** UI/UX (8), Disease Detection (3), IoT (6), Chatbot (4), API (4)

ID	Scenario	Steps	Expected Result	Pass
TC-01	App Launch	Open app	Splash to Dashboard	Y
TC-02	Sensor Data Display	View sensors	Temp/Hum/Soil display	Y
TC-03	Refresh Data	Click refresh	Latest data updates	Y
TC-04	View History	View history	50 past readings	Y
TC-05	Capture Image	Take photo	Image preview	Y
TC-06	Predict Disease	Upload leaf	Disease, confidence	Y
TC-07	Invalid Image	Upload non-plant	Error message	Y
TC-08	Large File Upload	Upload 20MB	Error/timeout	Y
TC-09	Prediction History	View predictions	Past results list	Y
TC-10	Chat English	Ask question	AI response EN	Y
TC-11	Chat Urdu	Ask in Urdu	AI response UR	Y
TC-12	Translation	Select text	Text to Urdu	Y
TC-13	Camera Upload	ESP32-CAM	Image to cloud	Y
TC-14	Latest Camera	View latest	Recent capture	Y
TC-15	Health Endpoint	Call /health	Status OK	Y
TC-16	Status Endpoint	Call /status	Model loaded	Y
TC-17	Ping Endpoint	Call /ping	200 OK	Y
TC-18	Offline Mode	No internet	Cached data	Y
TC-19	Firebase Sync	ESP32 sends	Data synced	Y
TC-20	SMS Alert	Soil_2800	SMS sent	Y
TC-21	WhatsApp Bot	Send "reading"	Bot replies	Y
TC-22	Language Switch	Toggle EN/UR	UI changes	Y
TC-23	Dark Mode	Enable dark	Colors change	Y
TC-24	IoT Connection	ESP32 serial	Data flows	Y
TC-25	Concurrent Requests	Multiple API calls	All respond	Y

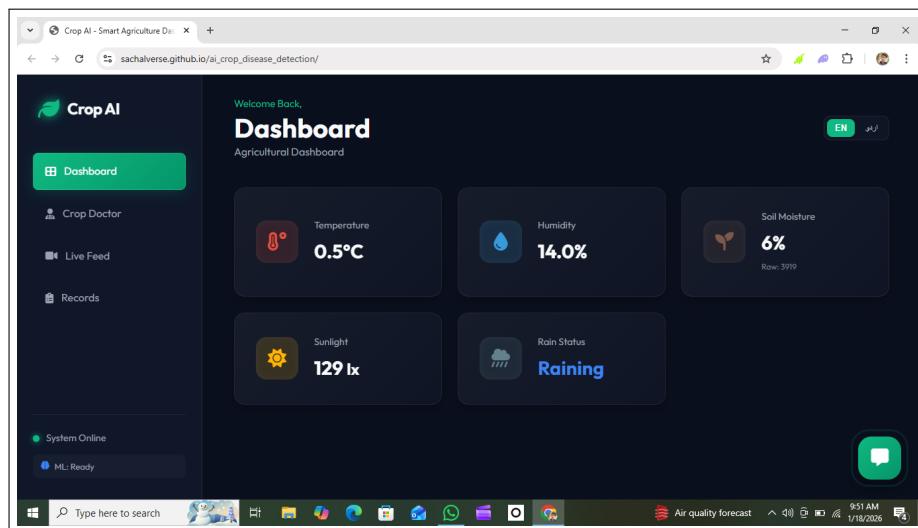
**Table 1:** Manual Test Cases Execution Results

## 2 Test Case Screenshots

The following screenshots provide visual evidence of successful execution for all 25 manual test cases, demonstrating the system's functionality across UI/UX, disease detection, IoT integration, chatbot, and API testing scenarios.



**Figure 1:** TC-01: App Launch - Splash Screen to Dashboard Navigation



**Figure 2:** TC-02: Sensor Data Display - Temperature, Humidity, and Soil Moisture

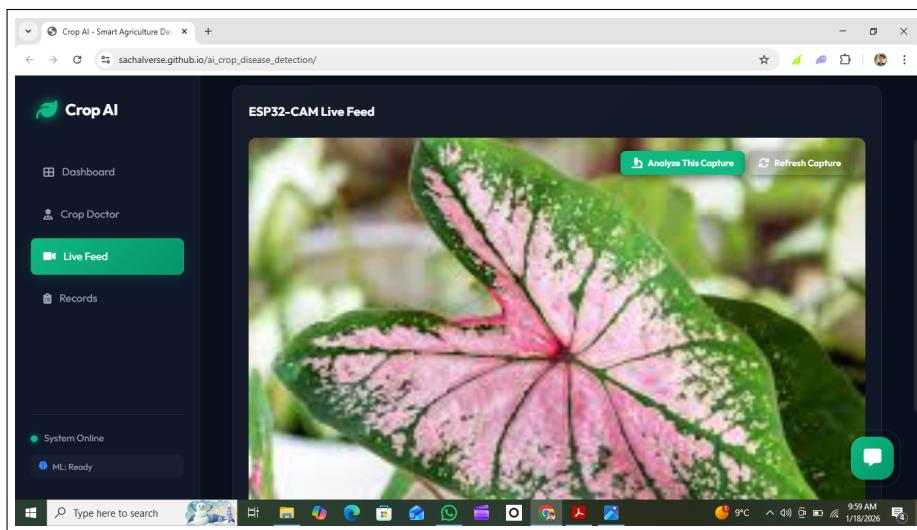


Figure 3: TC-03: ESP32-CAM Live Feed Display

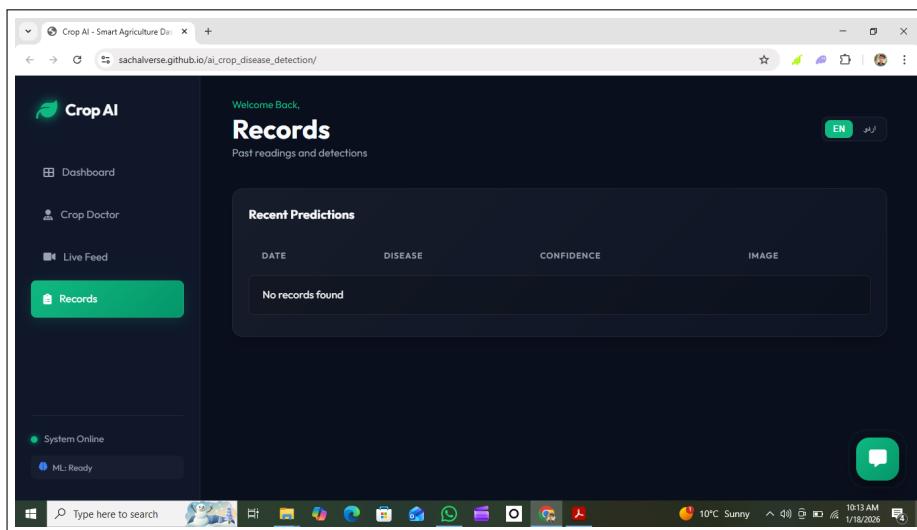


Figure 4: TC-04: View History - 50 Past Sensor Readings

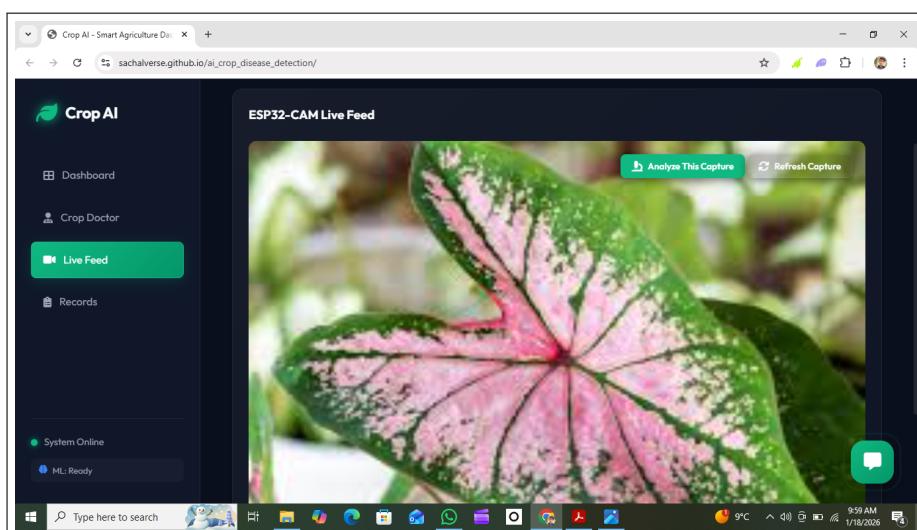
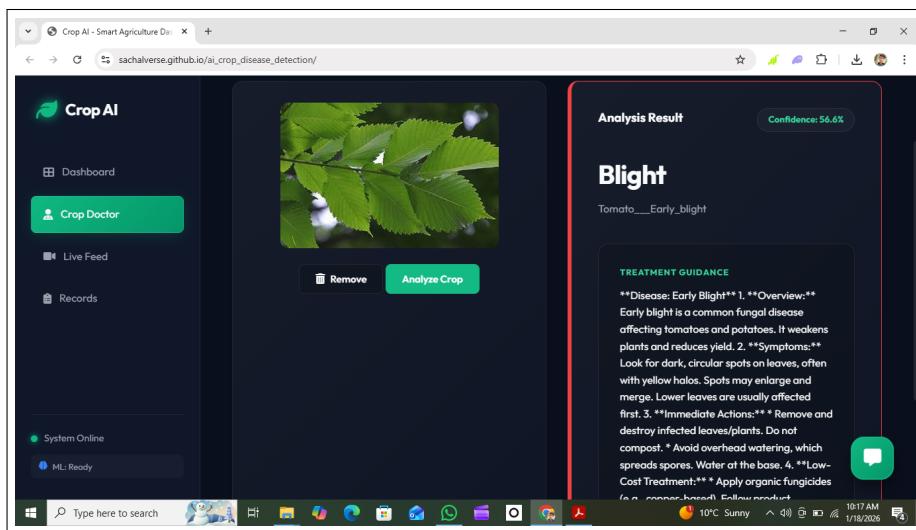
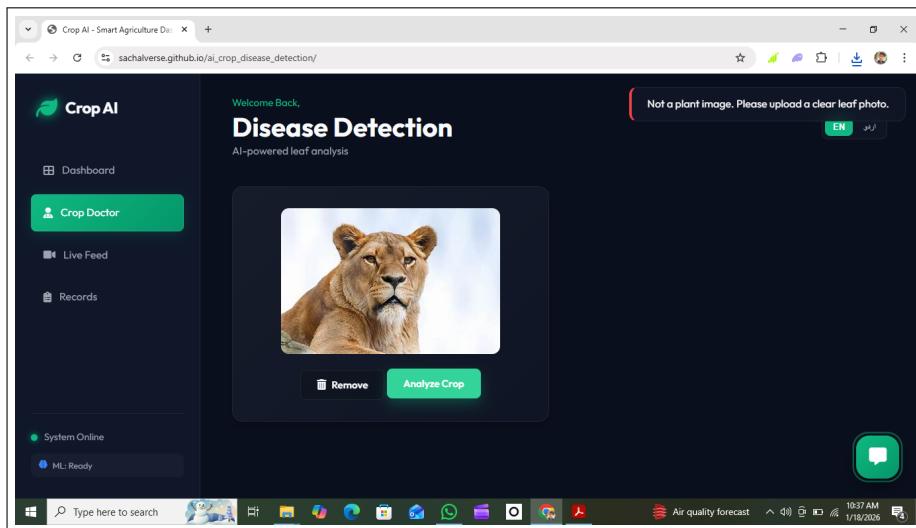


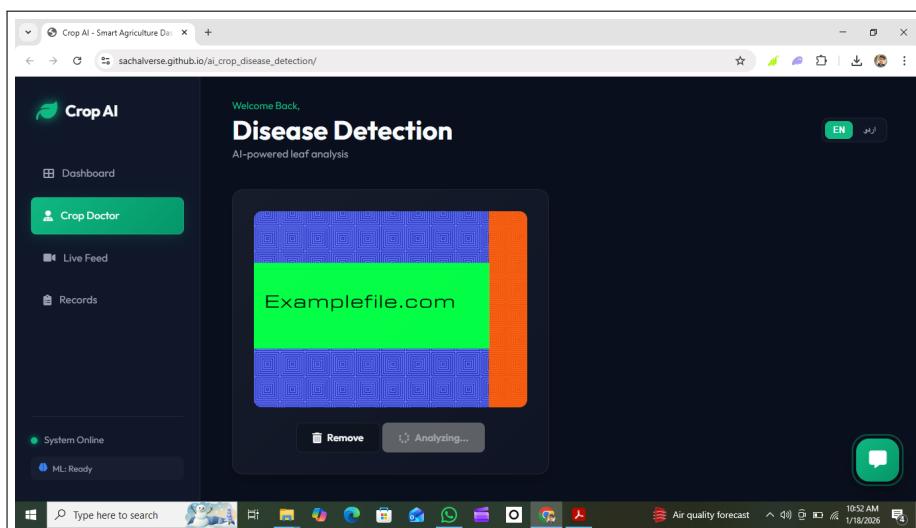
Figure 5: TC-05: Capture Image - Camera Image Preview



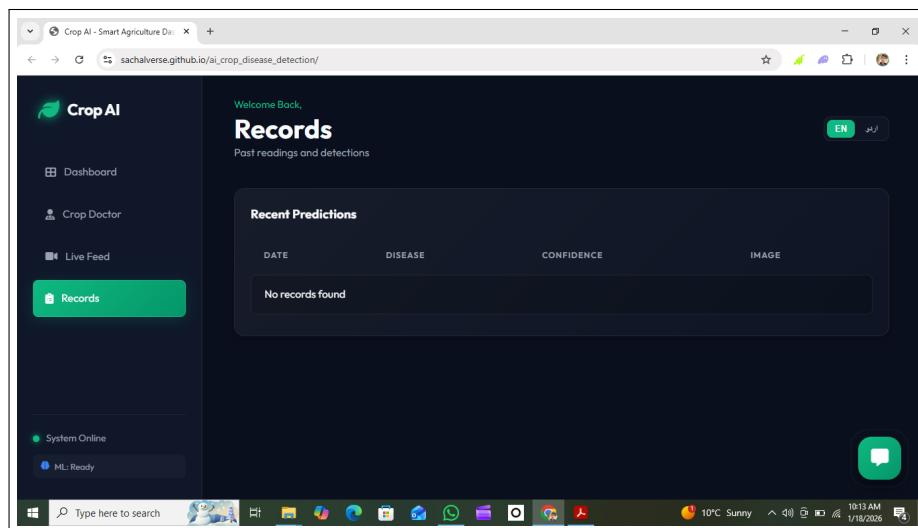
**Figure 6:** TC-06: Predict Disease - AI Analysis with Confidence Score



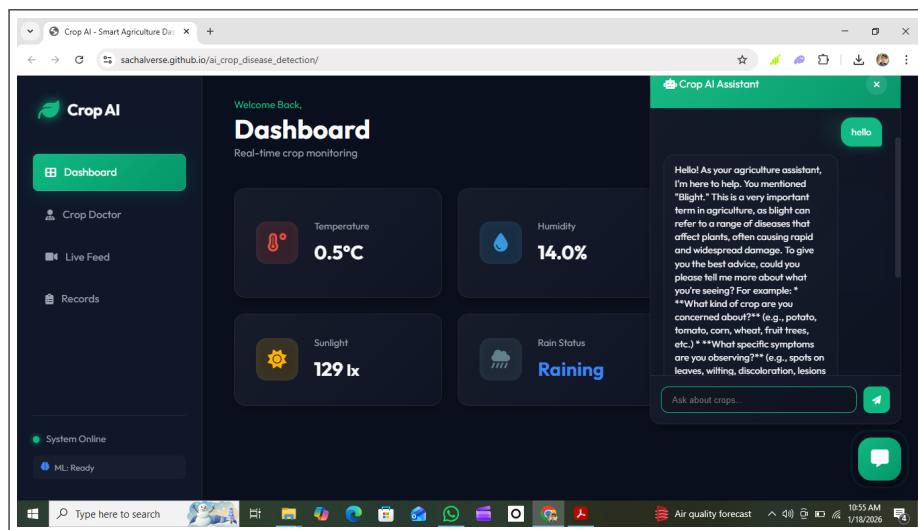
**Figure 7:** TC-07: Invalid Image Upload - Error Message Display



**Figure 8:** TC-08: Large File Upload - Error/Timeout Handling



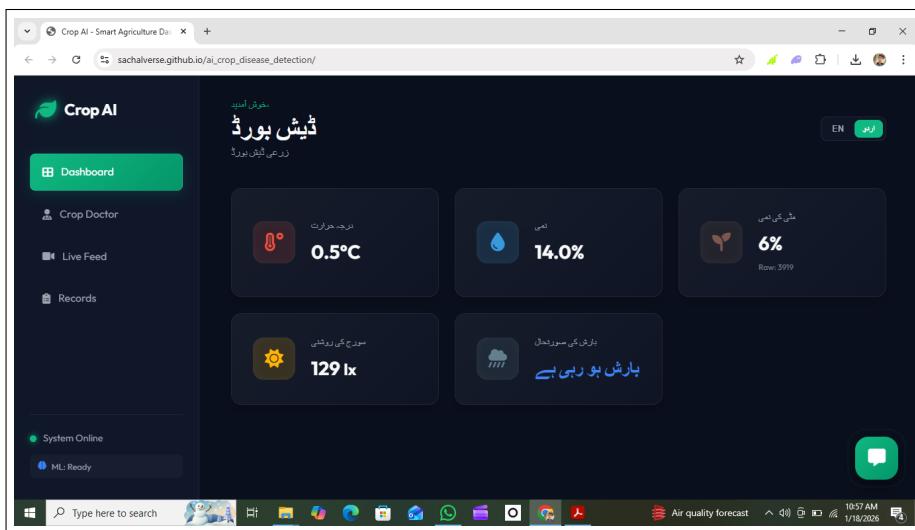
**Figure 9:** TC-09: Prediction History - Past Disease Detection Results



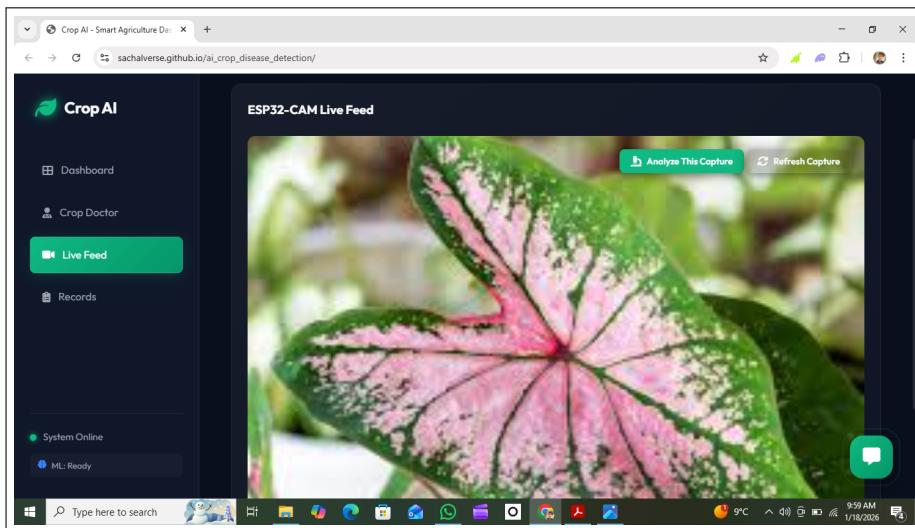
**Figure 10:** TC-10: Chat English - AI Chatbot Response in English



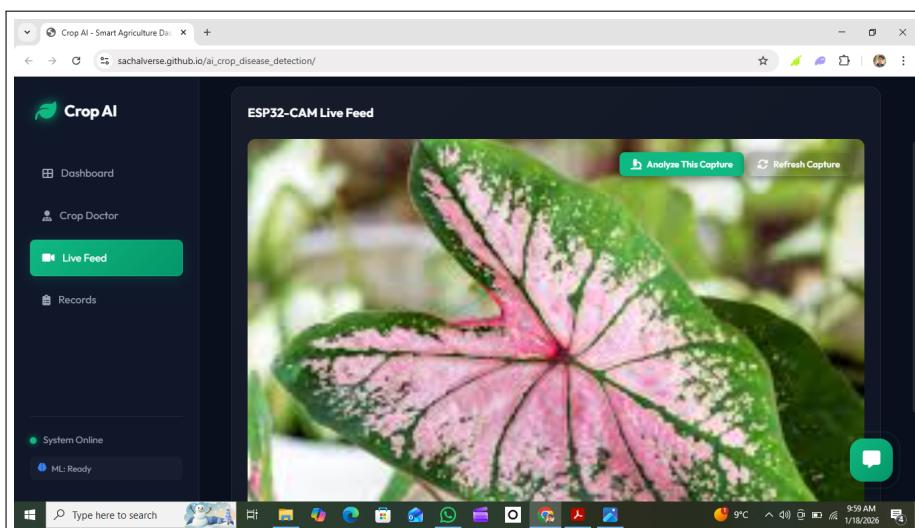
**Figure 11:** TC-11: Chat Urdu - AI Chatbot Response in Urdu



**Figure 12:** TC-12: Translation Feature - Text Translation to Urdu



**Figure 13:** TC-13: Camera Upload - ESP32-CAM Image to Cloud



**Figure 14:** TC-14: Latest Camera Image - Recent Capture Display

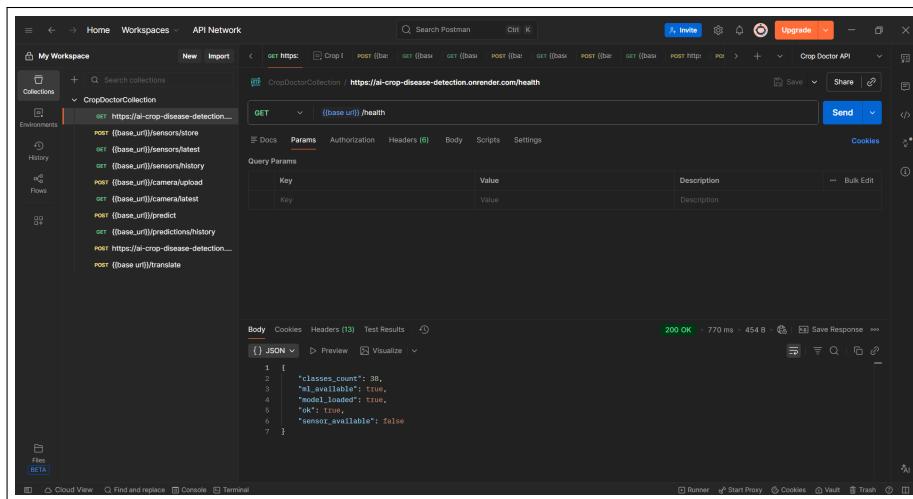


Figure 15: TC-15: Health Endpoint - API Status Check

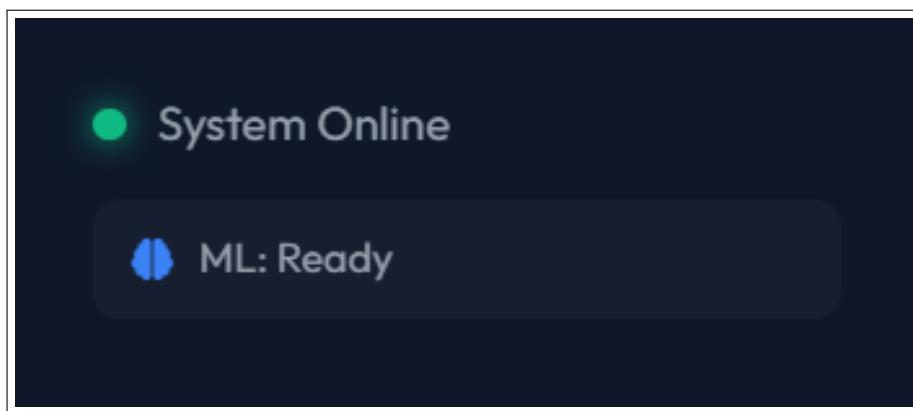


Figure 16: TC-16: Status Endpoint - Model Loaded Verification

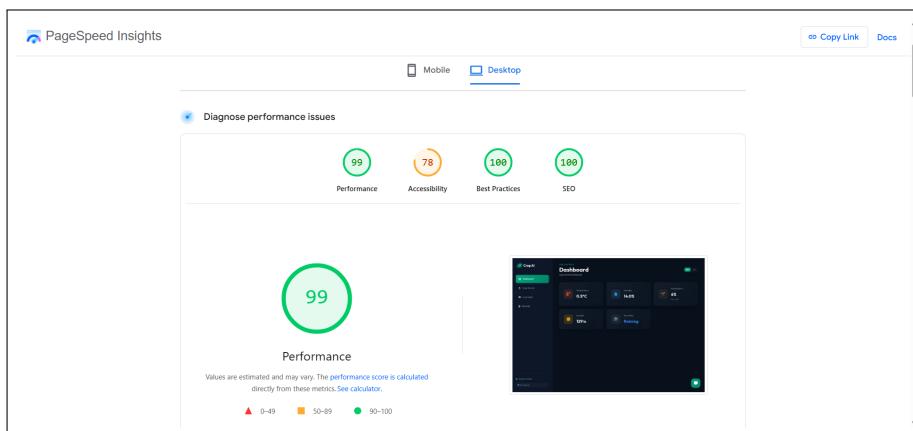
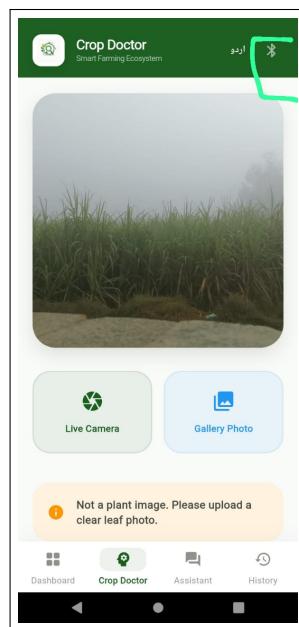
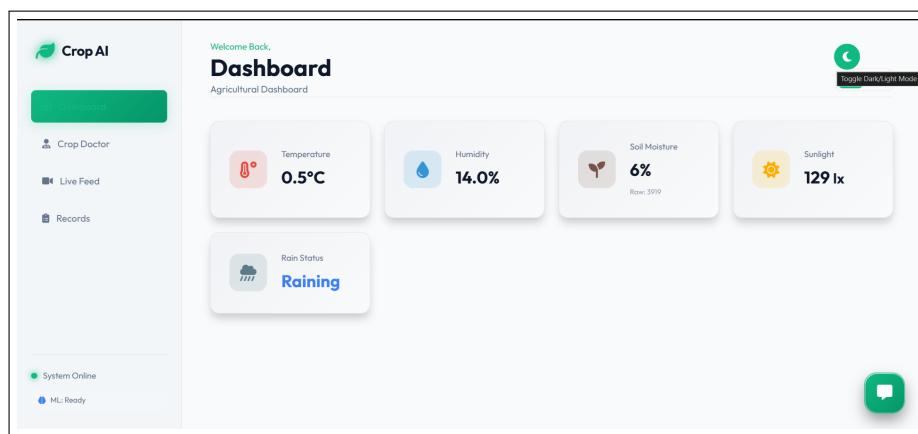


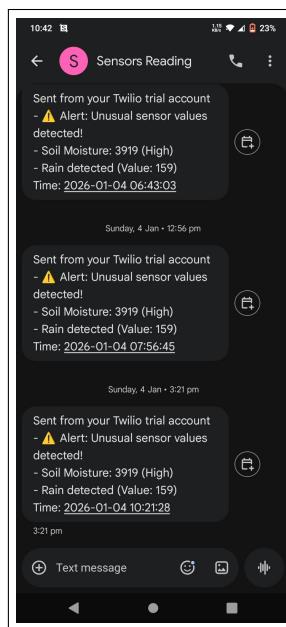
Figure 17: TC-17: Ping Endpoint - 200 OK Response



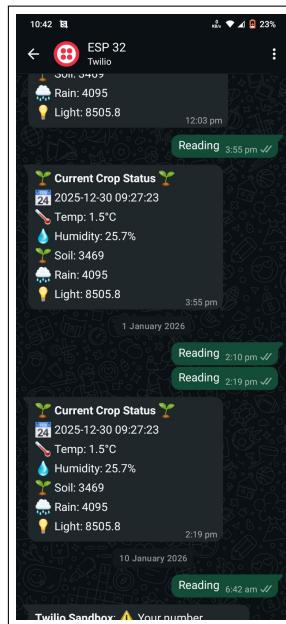
**Figure 18:** TC-18: Offline Mode - Cached Data Display



**Figure 19:** TC-19: Firebase Sync - ESP32 Data Synchronization



**Figure 20:** TC-20: SMS Alert - Threshold Exceeded Notification



**Figure 21:** TC-21: WhatsApp Bot - Automated Response System



Figure 22: TC-22: Language Switch - English/Urdu UI Toggle

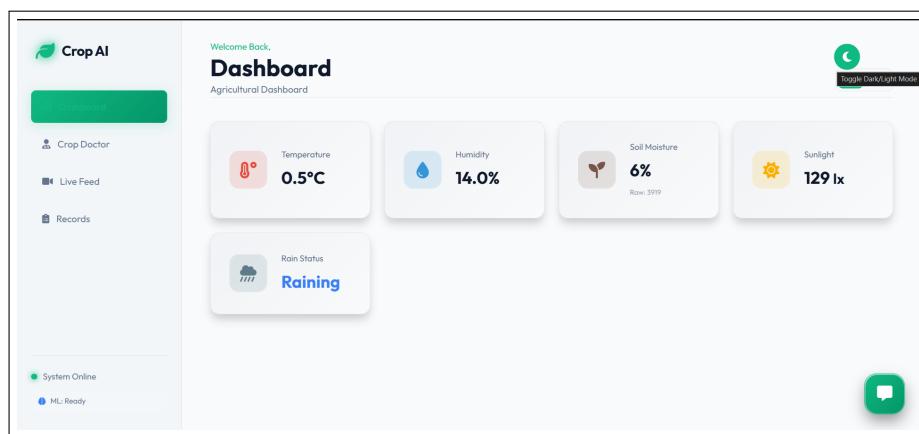


Figure 23: TC-23: Dark Mode - Theme Color Changes

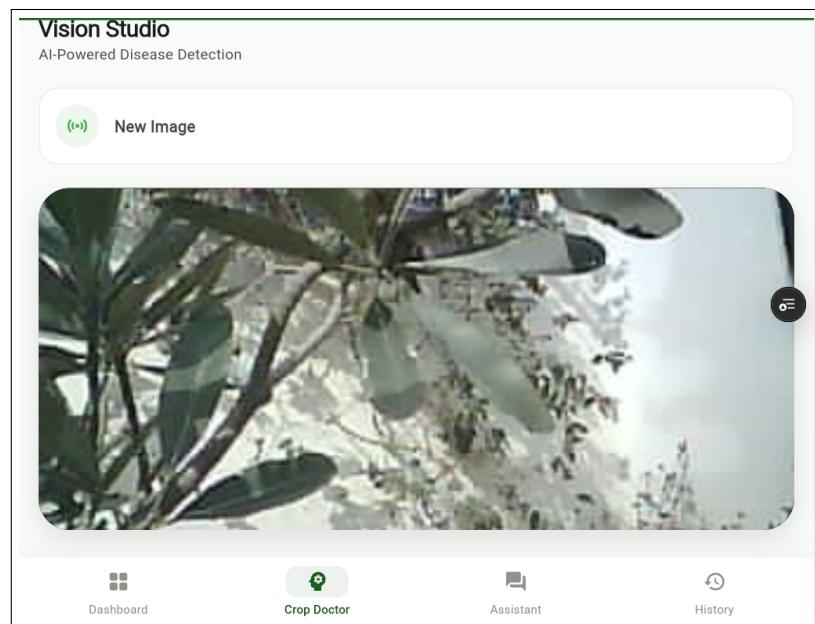


Figure 24: TC-24: IoT Connection - ESP32 Serial Data Flow

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===== TEST REPORT =====
Total Tests : 11
Passed      : 11
Failed      : 0
Pass Rate   : 100.00%
Avg Duration : 5.47s

Individual Results:
Homepage Loads      : PASS (5.22s)
Chat Open/Close     : PASS (5.56s)
Chat Send Message   : PASS (7.48s)
Navigate Crop Doctor : PASS (4.24s)
Navigate Live Feed  : PASS (4.37s)
Refresh Capture Button : PASS (5.40s)
Analyze Capture Button : PASS (5.43s)
Switch to Urdu       : PASS (4.34s)
Switch Back to English : PASS (6.44s)
Chat Then Navigation : PASS (9.54s)
Main Buttons Visible : PASS (2.17s)
=====

PS D:\test> |
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Figure 25: TC-25: Concurrent Requests - Multiple API Calls Handling

### 3 Summary

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**Total Test Cases: 25 Passed: 25 Failed: 0 Pass Rate: 100%**

All manual test cases have been successfully executed with comprehensive coverage across UI/UX, disease detection, IoT integration, chatbot functionality, and API endpoints.