

PigConnect Test Plan

I. Objective

To ensure that all components of the PigConnect system meet functional, performance, usability, and security requirements and function as expected before full deployment.

II. Test Scope

In-Scope:

- Farmer & buyer modules
- AI hybrid recommendation engine
- Chat and notification system
- Analytics dashboard
- Authentication, verification, and input validation
- Geolocation services

Out-of-Scope:

- Mobile application
- Payment gateway
- SMS verification and 2FA

III. Test Methodology

Testing Types:

1. Unit Testing
2. Integration Testing
3. System Testing
4. User Acceptance Testing (UAT)

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- 5. Performance Testing
- 6. Security Testing

IV. Test Environment

Backend: Laravel

Frontend: Vue.js

Database: MySQL

Web Server: Apache

Devices: Desktop, Laptop, Mobile Browsers

Browsers: Chrome, Firefox, Edge

V. Test Cases Summary

- User Authentication and Access

Test Case ID	Description	Expected Result
TC-001	Register as buyer/farmer	Email verification sent; account created
TC-002	Login with correct credentials	Redirected to respective dashboard
TC-003	Login with incorrect credentials	Error message shown
TC-004	Unauthorized page access	Redirected to login page

- Farmer Module

Test Case ID	Description	Expected Result
TC-010	Add/update pig details	Pig details saved and displayed properly
TC-011	Log expenses	Expenses displayed in dashboard
TC-012	Add vaccination records	Record reflected in pig profile

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TC-013	View analytics	Dashboard shows accurate charts/data
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- Buyer Module

Test Case ID	Description	Expected Result
TC-020	Input pig preferences	Preferences saved
TC-021	Receive AI-based recommendations	Relevant pig listings shown
TC-022	View farm details with geolocation	Location/map loaded
TC-023	Send message to farmer	Message appears in chat window

- AI Recommendation System

Test Case ID	Description	Expected Result
TC-030	Hybrid recommendation based on input	Suggestions personalized to buyer
TC-031	Test collaborative filtering	Past user behavior reflected
TC-032	Test content-based filtering	Traits-based recommendations shown

- Notifications & Messaging

Test Case ID	Description	Expected Result
TC-040	Send/receive chat messages	Messages shown in real time
TC-041	Receive feeding schedule notification	Email alert received
TC-042	Unread messages indicator	Notification badge shown

- Security Tests

Test Case ID	Description	Expected Result
TC-050	Email verification	Only verified users can access platform

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TC-051	SQL injection in input fields	Input sanitized, no injection possible
TC-052	SHA-encrypted password storage	Password not stored in plain text

VI. Testing Iterations Based on Incremental Methodology

- Iteration 1:

Focus: Authentication, Farmer/Buyer Dashboards

Tests: TC-001 to TC-004

- Iteration 2:

Focus: Farm management tools, Descriptive Analytics, AI Recommendations

Tests: TC-010 to TC-032

- Iteration 3:

Focus: Chat, Notifications, Geolocation, Security

Tests: TC-040 to TC-052