Phytora API Documentation

Table of Contents

1. Overview

Base URL

Development: http://localhost:3000/api/
Production: https://api.phytora.com/

Authentication

- All authenticated endpoints require a Bearer token in the Authorization header
- Tokens are obtained through your account registration process
- Example: Authorization: Bearer eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9...

Response Format

All responses follow this general format:

```
{
  "success": true,
  "data": {},
  "message": "Operation successful",
  "errors": null
}
```

Error Handling

Error responses include:

```
{
  "success": false,
  "data": null,
  "message": "Error description",
  "errors": {
    "field": ["Error details"]
  }
}
```

Common HTTP Status Codes:

- 200: Success
- 201: Created
- 400: Bad Request
- 401: Unauthorized
- 403: Forbidden
- 404: Not Found
- 500: Internal Server Error

2. Disease Detection Endpoints

Detect Apple Leaf Disease

POST /detect

Analyzes an uploaded image of an apple leaf to determine if it's healthy or diseased.

Request:

- Content-Type: multipart/form-data
- Body:
    - image: File (JPG or PNG format)

Response:


```
{
  "success": true,
  "data": {
    "status": "Diseased",
    "disease": "Apple Scab",
    "confidence": 95.7,
    "advice": "Apply fungicide specifically targeting scab. Remove fallen leaves to reduce spread."
  },
  "message": "Analysis completed successfully"
}
```


Error Response:


```
{
  "success": false,
  "data": null,
  "message": "Failed to process image",
  "errors": {
    "image": ["File must be an image"]
  }
}
```


3. Scan History Endpoints

Get Scan History

GET /history

Retrieves the user's scan history.

Query Parameters:

- page (optional): Page number (default: 1)
- limit (optional): Items per page (default: 10)

Response:


```
{
  "success": true,
  "data": {
    "scans": [
      {
        "id": "scan123",
        "date": "2025-05-04T14:23:45Z",
        "image": "base64encodedimage...",
        "result": {
          "status": "Diseased",
          "disease": "Apple Scab",
          "confidence": 95.7,
          "advice": "Apply fungicide specifically targeting scab. Remove fallen leaves to reduce spread."
        }
      }
    ],
    "pagination": {
      "currentPage": 1,
      "totalPages": 3,
      "totalItems": 27
    }
  },
  "message": "Scan history retrieved successfully"
}
```


Delete Scan

DELETE /history/{scanId}

Removes a specific scan from history.

Response:

```
{
  "success": true,
  "data": null,
  "message": "Scan deleted successfully"
}
```


Clear All Scans

DELETE /history

Removes all scans from history.

Response:


```
{
  "success": true,
  "data": null,
  "message": "All scans cleared successfully"
}
```


4. Disease Information Endpoints

List Diseases

GET /diseases

Retrieves a list of apple diseases with basic information.

Response:


```
{
  "success": true,
  "data": {
    "diseases": [
      {
        "id": "apple-scab",
        "name": "Apple Scab",
        "summary": "Common fungal disease affecting apple trees"
      },
```

```
    {
      "id": "apple-rust",
      "name": "Apple Rust",
      "summary": "Fungal disease characterized by orange spots on leaves"
    }
   ]
 },
 "message": "Diseases retrieved successfully"
}
```


Get Disease Details

GET /diseases/{diseaseId}

Retrieves detailed information about a specific disease.

Response:


```
{
 "success": true,
 "data": {
  "id": "apple-scab",
  "name": "Apple Scab",
  "symptoms": [
   "Olive-green or brown spots on leaves",
   "Dark, scabby lesions on fruit",
   "Premature leaf drop"
  ],
  "management": [
   "Apply fungicide specifically targeting scab",
   "Remove fallen leaves to reduce spread",
   "Prune trees to improve air circulation",
   "Plant scab-resistant varieties"
  ],
  "images": [
   {
    "url": "https://storage.phytora.com/diseases/apple-scab-1.jpg",
    "caption": "Apple leaf with scab lesions"
   }
  ]
```

```
  },
  "message": "Disease details retrieved successfully"
}
```


5. Rate Limiting

- All endpoints are rate-limited to prevent abuse
- Rate limits are based on IP address and API key
- Default limits:
    - Authenticated: 100 requests per hour
    - Unauthenticated: 10 requests per hour

Rate limit headers are included in responses:

- X-RateLimit-Limit: Maximum requests per hour
- X-RateLimit-Remaining: Remaining requests in the current period
- X-RateLimit-Reset: Time when the limit resets (Unix timestamp)

6. API Versioning

- Current version: v1
- Version is specified in the URL path
- Breaking changes will result in a new version
- Old versions are supported for 6 months after deprecation

7. Best Practices

1. Always check the response status code
2. Implement proper error handling
3. Use pagination for large datasets
4. Cache responses when appropriate
5. Include proper authentication headers
6. Follow rate limiting guidelines
7. Ensure uploaded images are clear and well-lit
8. Limit image file size to 10MB
9. Use HTTPS for all API requests

8. AI Engine Specifications

Phytora uses our proprietary plant disease detection AI model, trained on thousands of annotated apple leaf images. Our model is specifically designed to identify common apple tree diseases with high accuracy.

Model Details:

- Architecture: Custom convolutional neural network
- Training dataset: 50,000+ labeled apple leaf images
- Accuracy: 97.5% on validation set
- Diseases detected: Apple Scab, Apple Rust, and other common apple leaf conditions
- Confidence threshold: 70% (results below this threshold are marked as "Uncertain")

The detection process involves several stages:

1. Image preprocessing and normalization
2. Feature extraction using our custom CNN architecture
3. Classification of leaf condition (healthy vs. diseased)
4. Disease identification and confidence scoring
5. Treatment recommendation generation

Our model is continuously improved through regular retraining with new data, ensuring the highest possible accuracy for our users.