ChecklistGuro

# Precision Agriculture Checklist: Data Analysis & Yield Optimization Plan

## Data Acquisition & Sensor Calibration

Verify proper functionality and calibration of all data-gathering sensors (soil moisture, weather stations, yield monitors).

**Soil Moisture Sensor Reading (Avg.)**

Enter a number...

**Weather Station Temperature (°C)**

Enter a number...

**Yield Monitor Calibration Factor**

Enter a number...

**Last Sensor Calibration Date**

Enter date...

**Sensor Power Source (Battery/Solar)**

- [ ] Battery
- [ ] Solar

**GPS Accuracy (m)**

- [ ] < 1
- [ ] 1-3
- [ ] 3-5
- [ ] > 5

**Sensor Calibration Certificates (if applicable)**

Upload File

## Data Upload & Storage

Confirm seamless data transfer from field devices to cloud platform and ensure secure data storage.

**Last Data Upload Date**

Enter date...

**Last Data Upload Time**

Enter time...

**File Size (MB)**

Enter a number...

**Data Source**

- [ ] Sensor Network
- [ ] Drone Imagery
- [ ] Weather Station
- [ ] Manual Input

**Storage Location**

- [ ] Cloud Storage (AWS)
- [ ] Local Server
- [ ] Hybrid System

**Raw Data File (optional)**

Upload File

**Number of Records Uploaded**

Enter a number...

# Data Cleaning & Processing

Validate data integrity by identifying and addressing outliers, missing values, and inconsistencies.

**Identify and record number of missing data points per field.**

Enter a number...

**Record number of outlier values detected in soil moisture data.**

Enter a number...

**Select method used for outlier handling (e.g., removal, replacement, capping).**

- [ ] Removal
- [ ] Replacement (Mean)
- [ ] Replacement (Median)
- [ ] Capping

**Describe any data imputation techniques applied and justify their use.**

Write something...

**Select units for all data fields to ensure consistency.**

- [ ] Hectares
- [ ] Acres
- [ ] Centimeters
- [ ] Inches

**Date of Data Cleaning Completion**

Enter date...

# Spatial Data Analysis (Yield Maps & Zoning)

Analyze yield data to identify high and low-performing zones for targeted interventions.

**Yield Map File (e.g., shapefile, raster)**

Upload File

**Yield Map Resolution (pixels/hectare)**

Enter a number...

**Yield Units (Select one)**

- [ ] Bushels/Acre
- [ ] Kilograms/Hectare
- [ ] Metric Tons/Hectare

**Threshold for Low-Yield Zone (e.g., % below average)**

Enter a number...

**Threshold for High-Yield Zone (e.g., % above average)**

Enter a number...

**Notes on observed spatial patterns in yield data**

Write something...

**Zoning Method Used (Select one)**

- [ ] Manual delineation
- [ ] Cluster analysis
- [ ] Contour lines

# Variable Rate Application Planning

Develop variable rate application maps for fertilizer, pesticides, and irrigation based on data insights.

**Target Yield (bushels/acre)**

Enter a number...

**Fertilizer Type (Nitrogen)**

- [ ] Urea
- [ ] Ammonium Nitrate
- [ ] Anhydrous Ammonia

**Application Rate (lbs/acre) - Zone 1**

Enter a number...

**Application Rate (lbs/acre) - Zone 2**

Enter a number...

**Application Rate (lbs/acre) - Zone 3**

Enter a number...

**Application Timing (Select all that apply)**

- [ ] Pre-Plant
- [ ] Sidedress
- [ ] Topdress

**Planned Application Date**

Enter date...

**Notes/Justification for Variable Rate**

Write something...

**Upload VR Application Map (Shapefile/GeoTIFF)**

Upload File

# Equipment Calibration for Variable Rate Technology

Ensure accurate application rates through regular equipment calibration and nozzle checks.

**Nozzle Flow Rate (L/min)**

Enter a number...

**Application Rate (L/ha)**

Enter a number...

**Ground Speed (km/h)**

Enter a number...

**Distance Between Nozzles (cm)**

Enter a number...

**Calibration Method Used**

- [ ] Catch Can Method
- [ ] Electronic Calibration
- [ ] Manufacturer's Recommendation

**Calibration Date**

Enter date...

**Calibration Time**

Enter time...

**Calibration Log/Photos**

Upload File

# Precision Irrigation Scheduling

Optimize irrigation timing and water application based on soil moisture data and crop water requirements.

**Current Soil Moisture (inches)**

Enter a number...

**Target Soil Moisture (inches)**

Enter a number...

**Irrigation Run Time (minutes)**

Enter a number...

**Application Rate (inches/hour)**

Enter a number...

**Date of Last Irrigation**

Enter date...

**Scheduled Irrigation Start Time**

Enter time...

**Irrigation Zone**

- [ ] Zone 1
- [ ] Zone 2
- [ ] Zone 3
- [ ] Zone 4

**Irrigation Method**

- [ ] Drip
- [ ] Sprinkler
- [ ] Flood

# Nutrient Management Recommendations

Generate customized fertilizer recommendations based on soil tests and yield data to maximize nutrient use efficiency.

**Target Yield (Bushels/Acre)**

Enter a number...

**Soil Test Date**

**Nitrogen Recommendation (lbs/acre)**

Enter a number...

**Phosphorus Recommendation (lbs/acre)**

Enter a number...

**Potassium Recommendation (lbs/acre)**

Enter a number...

**Micronutrient Deficiencies Detected?**

- [ ] Iron
- [ ] Zinc
- [ ] Manganese
- [ ] Copper
- [ ] None

**Notes/Justification for Recommendations**

Write something...

## Pest & Disease Scouting & Monitoring

Implement pest and disease monitoring protocols and utilize data for targeted scouting and preventative measures.

**Scouting Date**

Enter date...

**Observed Pests**

- [ ] Aphids
- [ ] Spider Mites
- [ ] Corn Earworm
- [ ] Armyworm
- [ ] None Observed

**Observed Diseases**

- [ ] Leaf Spot
- [ ] Blight
- [ ] Rust
- [ ] Powdery Mildew
- [ ] None Observed

**Average Pest Count per Plant (if applicable)**

Enter a number...

**Detailed Scouting Notes**

Write something...

**Severity Level**

- [ ] Low
- [ ] Moderate
- [ ] High
- [ ] Critical

**Scouting Location (GPS Coordinates)**

Set My Current Location

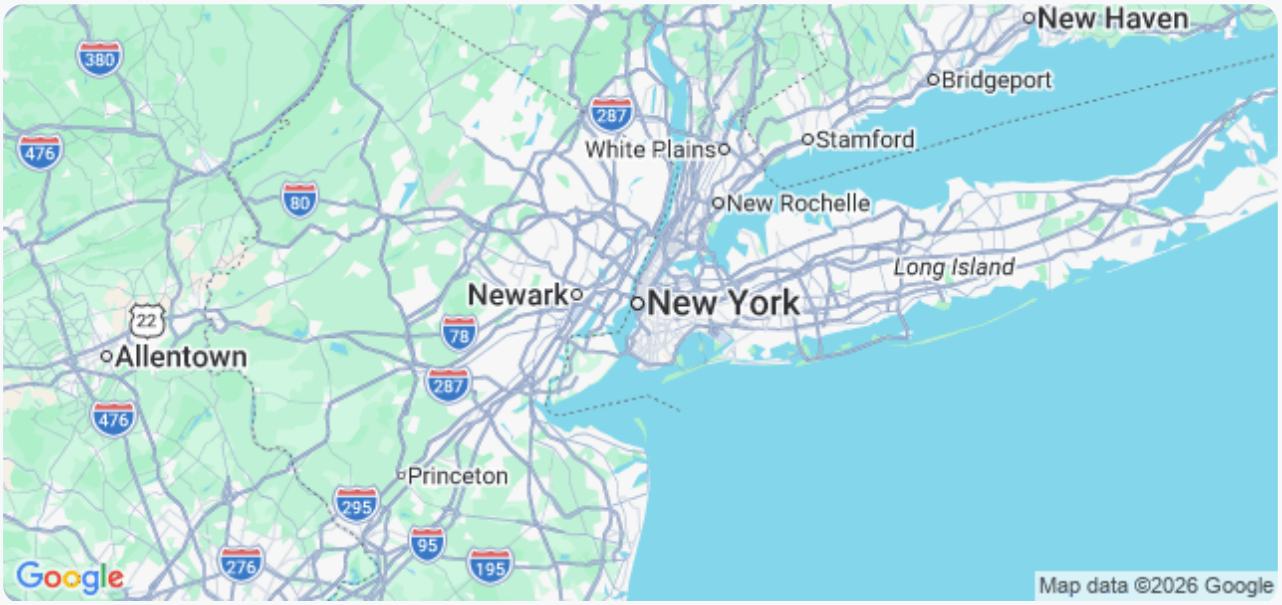


**Photo Evidence (Optional)**

Upload File

# Performance Evaluation & Reporting

Track the effectiveness of precision agriculture strategies through yield monitoring and data analysis for continuous improvement.

**Overall Yield Improvement (%)**

Enter a number...

**Fertilizer Use Efficiency (%)**

Enter a number...

**Water Use Efficiency (%)**

Enter a number...

**Pesticide Application Rate Reduction (%)**

Enter a number...

**Summary of Key Performance Findings**

Write something...

**Date of Performance Evaluation**

Enter date...

### Overall Strategy Success (Subjective)

- [ ] Highly Successful
- [ ] Moderately Successful
- [ ] Minimally Successful
- [ ] Unsuccessful

### Yield Map Comparison (Previous vs. Current)

Upload File