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

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

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

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