ChecklistGuro

Leaf Area Index (LAI) Measurement Checklist

Planning & Preparation

Ensuring necessary resources, permissions, and preliminary assessments are completed.

Project Area (hectares)

Enter a number...

Planned Start Date of Measurements

Enter date...

Planned End Date of Measurements

Enter date...

Measurement Technique(s) to be Used

- [ ] Destructive Sampling
- [ ] Litterfall Collection
- [ ] Trinecta/LiDAR
- [ ] Drone-Based Imagery
- [ ] Satellite Imagery

Brief Description of Crop/Vegetation Type and its characteristics

Write something...

Required Measurement Resolution (Spatial)

- [ ] Low (e.g., 10m)
- [ ] Medium (e.g., 1m)
- [ ] High (e.g., <0.1m)

Existing Site Maps/Layout Plans (if available)

Upload File

Any known site-specific challenges or considerations?

Write something...

Site Selection & Layout

Defining the area of interest, considering variability, and establishing measurement plots.

Number of Measurement Plots

Enter a number...

Plot Shape (e.g., Square, Circle, Rectangle)

- [ ] Square
- [ ] Circle
- [ ] Rectangle
- [ ] Other (specify)

Plot Size (e.g., in meters)

Enter a number...

Rationale for Site Selection

Write something...

GPS Coordinates of Representative Plot

Set My Current Location

Factors Considered for Site Representation

- [ ] Crop Variety
- [ ] Soil Type
- [ ] Fertility Level
- [ ] Irrigation Status
- [ ] Slope
- [ ] Other (specify)

Description of Surrounding Landscape

Write something...

Equipment & Calibration

Gathering and preparing all required instruments and ensuring their accuracy.

LAI Sensor Type (if applicable)

- [ ] Trisonyx
- [ ] Mark II
- [ ] Decagon
- [ ] Other (specify in LONG_TEXT)

Sensor Serial Number

Enter a number...

Last Calibration Date

Enter date...

Calibration Procedure

Write something...

Calibration Standard Value (if applicable)

Enter a number...

Measured Value (post-calibration)

Enter a number...

Calibration Successful?

- [ ] Yes
- [ ] No

Calibration Notes (if not successful)

Write something...

Calibration Certificate (if applicable)

Upload File

LAI Measurement - Field Methods (if applicable)

Specific steps for methods like destructive sampling, litterfall collection, or direct measurements on-site.

Plot Size (m²)

Enter a number...

Number of Plots Measured

Enter a number...

Destructive Sampling Method (if applicable)

- [ ] All Plants Harvested
- [ ] Random Quadrat Sampling
- [ ] Transect Sampling

Detailed Description of Sampling Procedure

Write something...

Leaf Dry Weight (g) per Plot

Enter a number...

Total One-Sided Area (cm²) of leaves per Plot

Enter a number...

Leaf Orientation Method (if applicable)

- [ ] Visual Estimation
- [ ] Photography & Image Analysis

Notes on Leaf Condition (e.g., disease, damage)

Write something...

Date of Field Measurement

Enter date...

Time of Field Measurement

LAI Measurement - Remote Sensing (if applicable)

Preparing for and conducting measurements using drones, satellites, or other remote sensing platforms.

Remote Sensing Platform

- [ ] Drone (UAV)
- [ ] Satellite (e.g., Landsat, Sentinel)
- [ ] Airborne Sensor

Flight Altitude (meters)

Enter a number...

Ground Sampling Distance (GSD) (meters)

Enter a number...

Sensor Type

- [ ] Multispectral
- [ ] Hyperspectral
- [ ] Thermal
- [ ] RGB

Orthomosaic/Image Products

Upload File

Radiometric/Atmospheric Correction Details

Write something...

Solar Zenith Angle (degrees) at Image Acquisition

Enter a number...

Image Acquisition Date

Enter date...

Processing Software Used

- [ ] Agisoft Metashape
- [ ] Pix4D
- [ ] ENVI
- [ ] QGIS
- [ ] Other

Any Specific Considerations/Notes on Image Acquisition and Processing

Write something...

Data Processing & Analysis

Handling raw data, applying necessary corrections, and calculating LAI values.

Radiometric Correction Factor (if applicable)

Enter a number...

Atmospheric Correction Factor (if applicable)

Enter a number...

Correction Method Applied (e.g., Dark Object Subtraction, Lambertian)

- [ ] Dark Object Subtraction
- [ ] Lambertian
- [ ] Other (Specify in LONG_TEXT)

Specify Correction Method (if 'Other' selected above)

Write something...

Pixel Size (m)

Enter a number...

Number of Pixels Used for LAI Calculation (if applicable)

Enter a number...

LAI Value (e.g., m^2/m^2)

Enter a number...

Notes on Data Processing (e.g., any challenges encountered)

Write something...

Processed Data File (e.g., CSV, GeoTIFF)

Upload File

Quality Control & Validation

Assessing the reliability of LAI measurements and comparing with ground truth data (if available).

Number of Replicated Measurements

Enter a number...

Measurement Error Assessment Conducted?

- [ ] Yes
- [ ] No

Description of Error Assessment Method (if applicable)

Write something...

Coefficient of Variation (CV) of LAI measurements

Enter a number...

Comparison with Ground Truth Data?

- [ ] Yes
- [ ] No

Description of Ground Truth Data (if available)

Write something...

RMSE (Root Mean Squared Error) - LAI (if ground truth available)

Enter a number...

Raw Data Files for QC

Upload File

Date of Quality Control Check

Enter date...

Documentation & Reporting

Recording all procedures, observations, and results for future reference and reporting.

Summary of Methods Used

Write something...

Date of Measurement

Enter date...

Time of Measurement (Start)

Number of Measurement Plots/Points

Enter a number...

Raw Data Files (e.g., instrument outputs, image files)

Upload File

Observations & Challenges Encountered

Write something...

Measurement Unit(s) Used

- [ ] m^2 / m^2
- [ ] Leaf Area / Ground Area

Observer Signature