ChecklistGuro

Grain Quality Testing (Protein, Oil, etc.) Checklist

Sample Preparation

Procedures for obtaining and preparing the grain sample for analysis. Ensuring a representative sample is crucial for accurate results.

Lot/Batch Identification

Write something...

Sample Weight (g)

Enter a number...

Number of Subsamples Taken

Enter a number...

Sampling Method

- [ ] Random
- [ ] Stratified
- [ ] Grab

Description of Sample Appearance (Color, Odor, Foreign Matter)

Write something...

Photograph of Sample (Optional)

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Notes on Sample Handling or Potential Contamination

Write something...

Moisture Content

Determining the percentage of water in the grain. Impacts other quality parameters and storage viability.

Moisture Content (%)

Enter a number...

Moisture Determination Method

- [ ] Air Drying Method
- [ ] Oven Drying Method (Standard)
- [ ] Rapid Moisture Analyzer
- [ ] Other (Specify in LONG_TEXT)

Method Specification (If 'Other' selected above)

Write something...

Drying Temperature (°C)

Enter a number...

Drying Time (hours)

Enter a number...

Date of Moisture Determination

Enter date...

Time of Moisture Determination

Equipment/Instrument Used

Write something...

Protein Content

Assessing the percentage of protein, a key indicator of nutritional value and baking quality.

Crude Protein (%)

Enter a number...

Moisture Correction Factor

Enter a number...

Nitrogen Conversion Factor (if applicable)

Enter a number...

Protein Measurement Method

- [ ] Kjeldahl
- [ ] NIRS (Near-Infrared Spectroscopy)
- [ ] Rapid Quantification (e.g., Dumas)

Any unusual observations during the analysis?

Write something...

Attach Protein Analysis Report (if available)

Upload File

Protein Quality Assessment (if applicable)

- [ ] Essential Amino Acid Profile Needed
- [ ] Protein Digestibility Index (PDI) Required

Oil Content

Measuring the percentage of oil, important for oilseed crops and overall nutritional value.

Oil Content (%)

Enter a number...

Moisture Content (Used for Calculation)

Enter a number...

Extraction Method Used

- [ ] Soxhlet
- [ ] Nuclear Magnetic Resonance (NMR)
- [ ] Near-Infrared Spectroscopy (NIR)

Any Anomalies Observed During Extraction

Write something...

Spectroscopy Data (if applicable)

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Replicate 1 Oil Content (%)

Enter a number...

Replicate 2 Oil Content (%)

Enter a number...

Replicate 3 Oil Content (%)

Enter a number...

Starch Content & Quality

Evaluating the amount and type of starch, particularly relevant for grains used for human consumption or animal feed.

Total Starch Content (%)

Enter a number...

Amylose Content (%)

Enter a number...

Amylopectin Content (%)

Enter a number...

Starch Damage (Visual Inspection)

- [ ] None
- [ ] Slight
- [ ] Moderate
- [ ] Severe

Microscopic Observations of Starch Granules

Write something...

Gelatinization Temperature (°C)

Pasting Viscosity (cP)

Enter a number...

Peak Viscosity (cP)

Enter a number...

Fiber Content

Analyzing the levels of fiber, contributing to nutritional assessment.

Total Dietary Fiber (g/100g)

Enter a number...

Soluble Fiber (g/100g)

Enter a number...

Insoluble Fiber (g/100g)

Enter a number...

Fiber Analysis Method Used

- [ ] AOAC 991.43
- [ ] Enzymatic Method
- [ ] Other (Specify in LONG_TEXT)

Details if 'Other' Method Selected

Write something...

Lab ID/Sample Code

Write something...

Test Weight & Bulk Density

Measuring the weight of a known volume of grain and its density, indicators of grain size and overall quality.

Test Weight (lbs/bushel)

Enter a number...

Bulk Density (lbs/cubic foot)

Enter a number...

Measurement Method Used

- [ ] Standard Weighing Method
- [ ] Volumetric Method
- [ ] Other (Specify)

Notes/Observations (e.g., grain condition, equipment used)

Write something...

Sample Volume (bushels)

Enter a number...

Grain Variety/Type

- [ ] Wheat
- [ ] Corn
- [ ] Soybean
- [ ] Barley
- [ ] Oats
- [ ] Other (Specify)

Falling Number

Determining the rate at which a starch suspension falls, reflecting the level of enzymatic degradation – particularly relevant for wheat.

Falling Number Result (seconds)

Enter a number...

Temperature During Measurement (°C)

Enter a number...

Measurement Time (minutes)

Enter a number...

Method Used

- [ ] Rapid Visco Analyzer (RVA)
- [ ] Other (Specify in Long Text)

If 'Other' Method Used, Describe

Write something...

Acceptable Range?

- [ ] Yes
- [ ] No
- [ ] Not Applicable

Comments/Observations (if outside acceptable range)

Write something...

Gluten Content & Quality (Wheat)

Specifically for wheat, assessing gluten content and its properties, crucial for baking performance.

Gluten Content (%)

Enter a number...

Wet Gluten Content (g/100g)

Enter a number...

Gluten Index (Falling Number related)

Enter a number...

Gluten Strength (Farfarinograph/Mixograph)

Enter a number...

Gluten Color (Visual)

- [ ] Pale
- [ ] Cream
- [ ] Light Brown
- [ ] Brown

Gluten Texture Description (e.g., elasticity, stickiness)

Write something...

Gluten Particle Size Distribution

- [ ] Fine
- [ ] Medium
- [ ] Coarse

Any unusual observations during gluten testing?

Write something...

Germination Rate (Seed Grain)

If grain is being evaluated for seed purposes, determine the germination percentage.

Number of Seeds Tested

Enter a number...

Number of Seeds Germinated

Enter a number...

Germination Rate (%)

Enter a number...

Date of Germination Test Started

Enter date...

Date of Germination Test Completed

Enter date...

Observations/Notes (e.g., seed vigor, uniformity, unusual growth)

Write something...

Germination Medium Used

- [ ] Paper Towel
- [ ] Sand
- [ ] Soil
- [ ] Agar

Seed Variety

Pest & Disease Assessment

Visual inspection for signs of insect infestation or fungal diseases. Impacts grain quality and safety.

Visual Evidence of Insects (e.g., live insects, larvae, frass)?

- [ ] Yes - Describe in Long Text
- [ ] No
- [ ] Unsure - Requires Further Investigation

Detailed Description of Insect Activity (if present)

Write something...

Photograph of Insect Infestation (if present)

Upload File

Evidence of Fungal Disease (e.g., discoloration, moldy odor)?

- [ ] Yes - Describe in Long Text
- [ ] No
- [ ] Unsure - Requires Further Investigation

Detailed Description of Disease Symptoms (if present)

Write something...

Estimated Percentage of Grain Affected by Disease (if present)

Enter a number...

Suspected Disease Type (if present – based on visual assessment)

- [ ] Fusarium Head Blight
- [ ] Aspergillus
- [ ] Penicillium
- [ ] Unknown
- [ ] None

Date of Pest/Disease Observation

Enter date...

Location of Grain Bin/Area where Observation was Made

Set My Current Location

Mycotoxin Screening

Testing for the presence of mycotoxins (toxins produced by fungi), a critical safety concern.

Mycotoxin Panel Tested

- [ ] Aflatoxins (B1, B2, G1, G2)
- [ ] Deoxynivalenol (DON)
- [ ] Fumonisin B1 & B2
- [ ] Zearalenone
- [ ] Ochratoxin A
- [ ] Fusarium Toxins (Complex)
- [ ] Other (Specify in LONG_TEXT)

Specify 'Other' Mycotoxins (if selected)

Write something...

Aflatoxin B1 Result (µg/kg)

Enter a number...

Deoxynivalenol (DON) Result (µg/kg)

Enter a number...

Fumonisin B1 & B2 Result (µg/kg)

Enter a number...

Result Interpretation

- [ ] Pass - Below Action Level
- [ ] Warning - Approaching Action Level
- [ ] Fail - Above Action Level

Certificate of Analysis (COA)

Upload File

Date of Analysis

Enter date...

Data Recording & Reporting

Properly documenting all results, observations, and any deviations from standard procedures.

Sample ID

Enter a number...

Date of Analysis

Enter date...

Time of Analysis

Moisture Content (%)

Enter a number...

Protein Content (%)

Enter a number...

Oil Content (%)

Enter a number...

Observations/Notes

Write something...

Equipment Used (e.g., NIR, Kjeldahl)

- [ ] NIR
- [ ] Kjeldahl
- [ ] Other

Analyst

Calibration Curve/Data Sheet

Upload File