CROPLAND
ANALYTICS
UNEARTHING MATTERS

If you can't measure it, you can't manage it!
That is especially true in crop production.
Plant tissue testing provides accurate, real-time measurements to inform your decision-making throughout the growing season.
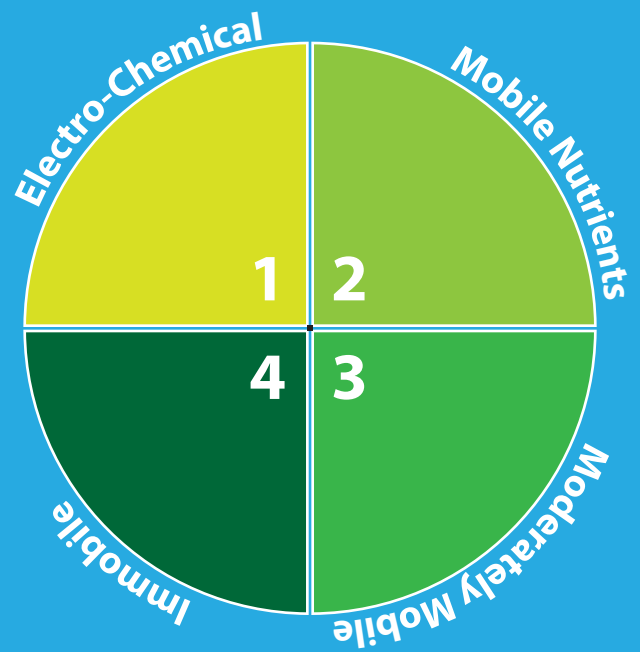
Why Cropland Analytics?

Express Turnaround:

Knowing that the turnaround for tissue testing is key in decision-making, Cropland Analytics is committed to 24-hour turnaround.

Testing Process:

1. Electro-Chemical Analysis: pH, Brix, EC
2. Mobile Nutrients: NO3-N, NH4-N, K, Cl
3. Moderately Mobile Nutrients: P, S, Mg
4. Immobile Nutrients: Ca, Fe, B, Mn, Zn, Cu, Mo

Electro-Chemical — **1**

Mobile Nutrients — **2**

Moderately Mobile — **3**

Immobile — **4**

Process Explanation:

Why does Cropland Analytics have this approach for Tissue Testing?

Testing for pH, Brix, and EC:
a. Helps prevent nutrient lockout and deficiencies by ensuring the pH is within the ideal range.
b. Ensures Brix is within the optimal range – measures the sugar content, which is an indicator of the plant's health and vigour.
c. Helps identify high EC levels that can cause salt stress and damage to plant roots, manage irrigation practices to maintain optimal EC levels, maintain effective water use and minimize waste.

Mobile Nutrients:

Testing for NO3-N and NH4-N
i. NO3-N and NH4-N are the two primary forms of nitrogen absorbed by plants and their presence indicates the immediate availability of nitrogen to plants.
ii. By measuring NO_3^--N and NH_4^+-N, growers can evaluate how effectively plants are taking up nitrogen from the soil and fertilizers and adjust fertilization practices to improve nitrogen use.

b. Potassium (K)
i. Potassium regulates water uptake and retention and activates enzymes involved in photosynthesis and other metabolic processes.
ii. Testing for potassium helps optimize water management in crops, especially during drought conditions and strengthens plant defence against pathogens and pests. In addition, it ensures high-quality produce with better marketability.

c. Chlorine (Cl)
It is very important to detect chlorine deficiencies that can lead to reduced growth and wilting

Moderately Mobile Nutrients:

a. Phosphorous (P)

Phosphorous is particularly important during the early stages of plant growth. Detecting deficiencies helps ensure optimal levels for vigorous root development, high yields, and plant ability to resist infections and abiotic stresses.

b. Sulphur (S)

Testing for sulphur in plant tissue helps ensure adequate levels for plant overall health and resistance to pathogens and detect deficiencies that can impair growth and crop quality.

c. Magnesium (Mg)

Testing for magnesium helps ensure adequate levels for optimal photosynthetic efficiency and prevent deficiencies that can lead to chlorosis and reduced growth.
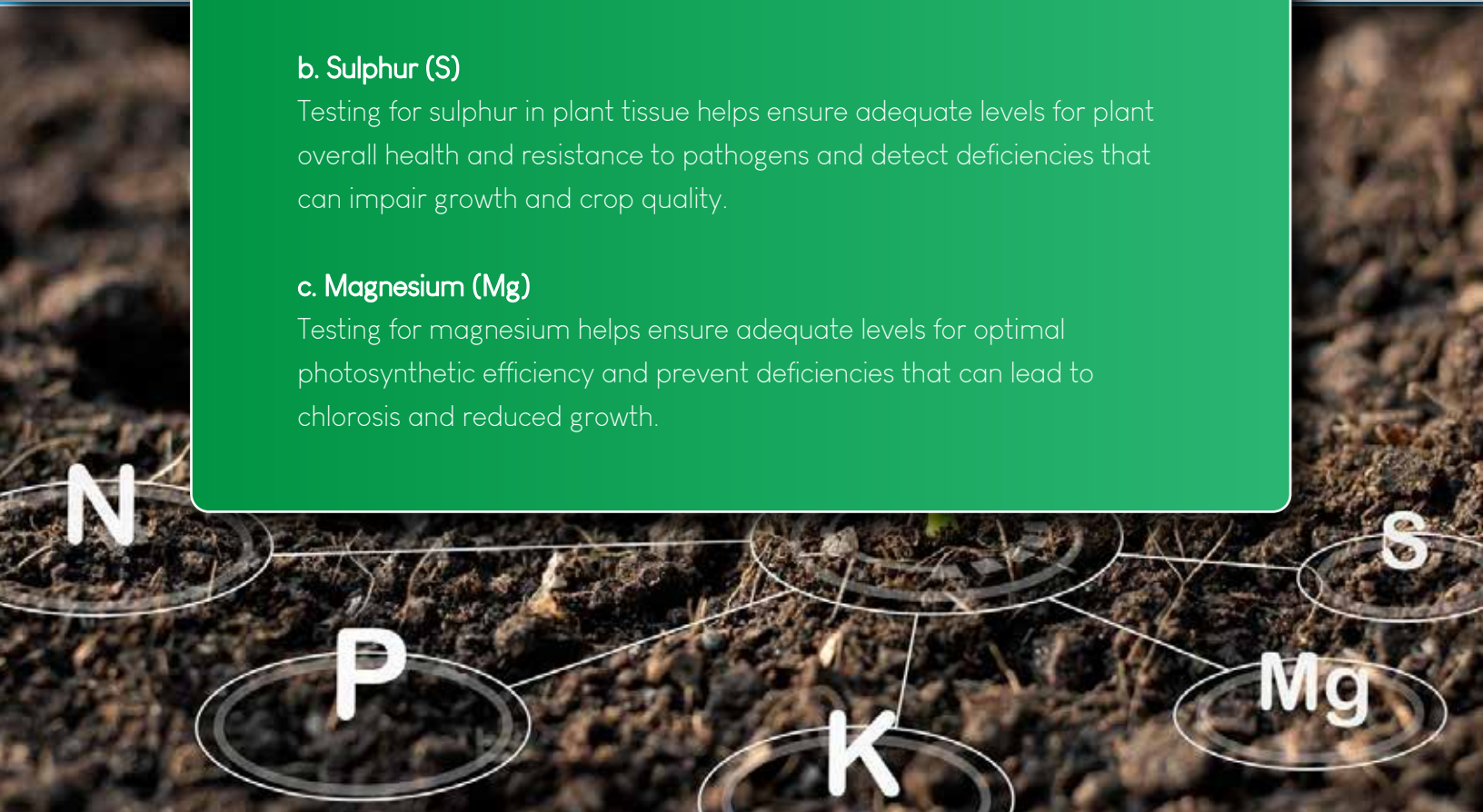
Immobile Nutrients:

a. Calcium (Ca)
Testing for Calcium and detecting its deficiencies help ensure robust plant growth and development and enhance plant resistance to diseases and environmental stresses.

b. Iron (Fe)
Detection of iron deficiencies in plant tissue helps prevent chlorosis and make sure plants are green and healthy.

c. Boron (B)
Testing for boron helps detect boron deficiencies that lead to poor pollination and fruit set and ensures strong cell walls and healthy growth.

d. Manganese (Mn)
Early detection of manganese deficiencies that cause interveinal chlorosis, particularly in young leaves. It also ensures efficient metabolic processes.

e. Molybdenum (Mo)
Testing for molybdenum helps identify deficiencies that can impair nitrogen metabolism and affect crops that rely on nitrogen fixation.

f. Copper (Cu)
Detect copper deficiencies that can cause stunted growth and dieback of shoot tips

g. Zinc (Zn)
Identify deficiencies that can cause stunted growth and small leaves.

Tissue Test Report

Farm Name:

Contact Name:

Contact Phone:

Field ID:

Contact Email:

Sample ID:

Plant: Barley   **Tissue: New Leaves**   **Date:**

ELECTRO-CHEMICAL ANALYSIS		
	Measured Value	Remark
pH	7	Optimal
Brix	10	Low
EC	3	High

VISUAL ANALYSIS	
NORMAL	Yes
ABNORMAL	
COMMENTS	

NUTRIENT ANALYSIS

MOBILE NUTRIENTS		
	Measured value (%)	Remark
Nitrate-N	2	Optimal
Ammonium-N	3	Optimal
Potassium	0.5	Deficient
Chlorine	0.8	Very High

MODERATELY MOBILE NUTRIENTS		
	Measured value (%)	Remark
Phosphorous	0.4	Optimal
Sulphur	0.5	Optimal
Magnesium	1	Optimal

IMMOBILE NUTRIENTS		
	Measured value (ppm)	Remark
Calcium	5000	Optimal
Boron	8	Very High
Copper	4	Low

IMMOBILE NUTRIENTS		
	Measured value	Remark
Iron	250	High
Manganese	100	Optimal
Zinc	10	Deficient
Molybdenum	4	Very High

DISCLAIMER:

The results presented in this report are accurate to the best of our abilities using the methods and techniques available at the time of analysis. It's important to consult with a qualified agronomist, soil scientist, or agricultural extension specialist before mak-ing any significant decisions based on the information provided in this report. They can provide personalized advice and help you interpret the results in the context of your unique circumstances. Therefore, the results should be interpreted as a snapshot of the plant's condition at the time of sampling.

Authorized Signature: _____

Optimal Ranges of Barley Tissue Tests

Test	Optimal Range
pH	6-7.5
Brix	12-18 Bx degree
EC	1.2-2 dS/m
P	0.2-0.5%
S	0.15-0.65%
Mg	0.14-1%
Fe	30-200 ppm
Mn	20-150 ppm
Zn	18-70 ppm
Mo	0.1-2 ppm

Test	Optimal Range
NO3-N +NH4-N	4-5%
K	2-4%
Cl	0.2-0.4%
Ca	2000-10000 ppm
B	1.5-4 ppm
Cu	4.5-15 ppm