



# PLANT SAP ANALYSIS

## THE FUTURE OF NUTRIENT MONITORING IN CANNABIS IS HERE.

*AccuScience is pleased to announce we now can provide plant sap analysis for our clients.*

## PLANT SAP

What is plant sap and why would a grower want it analyzed? Sap is a fluid solution used for transportation of water, nutrients, minerals, and metabolites throughout the plant, which flows through the xylem and phloem.

Analysis of the sap will give growers real-time information of what nutrients the cannabis plant is getting and in what quantities, rather than a traditional leaf tissue analysis that only offers a snapshot of the plant's nutrient conditions, which can lag days or weeks behind manifestation of potential deficiencies, excesses, and imbalances that the plant is currently experiencing at the time of sampling.

Furthermore, throughout a plant's growing stages, nutrient demands can shift drastically. Sap analysis allows the grower to adjust to these dynamic shifts, which the snapshots from soil and leaf tissue analyses alone cannot capture. Overall, sap analysis is the most precise nutrient management and optimization approach for growers seeking to maximize their crop quality and yields, and to reduce nutrient costs in the long term.

## NUTRIENT DEFICIENCY

**Nutrient deficiency and why precise plant nutrient management is important:** Nutrient deficiencies can result in decreased yields of the cannabis plant, which ultimately affect the abundance of cannabinoids, terpenes, and flavonoids, culminating in a lower-quality final product. A nutrient-deficient plant is also much more susceptible to pests and pathogens.

Deficiencies can be the result of inadequate fertilizer inputs, but at the same time, an excess of specific nutrients or fertilizers can cause a lockout, blocking the uptake of other competing essential nutrients. And as mentioned previously, the plant's nutrient demands are dynamic—they change throughout the growing stages of the plant—so without appropriate adjustments to the nutrient management, at least one scenario is likely to arise at some point. In any case, the result is poorer yields, compromised quality, and higher production costs from potential remediation measures and wasted fertilizer.



### FACT SHEET OVERVIEW

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- NUTRIENT DEFICIENCY
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- SAP PARAMETERS

## CONTACT US

Contact us today for a SAP analysis.

**AccuScience**  
LABORATORIES

40 S. Dewey St.  
St. Eustis, FL 32726

**352.308.8020**

info@accuscience.com

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## SAP ANALYSIS

How is the sap analysis in Cannabis performed? AccuScience Laboratories provides two types of sap analysis, Soil Uptake sap analysis and Translocation sap analysis.

- Soil Uptake sap analysis: Compares the amount of nutrients in the soil and what moves upward from the plant's xylem into new leaves. By studying soil uptake sap, a grower can determine whether uptake is sufficient when compared to optimal levels and whether a deficiency is the result of inadequate supply in the soil or due to an imbalance resulting from an overabundance of a competing nutrient.
- Translocation sap analysis: Measures the difference between new and old leaves to determine how the plant is utilizing the mobile nutrients. The goal is for the growers to get live data of nutrient flow within the plant. Measuring the steepness of the gradient from old leaves to new leaves can be used to gauge the demand for a given nutrient at a specific time in the growth cycle of the plant.

## SAP PARAMETERS

What Parameters are measured? AccuScience Laboratories' sap analysis includes the following parameters: Aluminum (Al), Boron (B), Calcium (Ca), Copper (Cu), Iron (Fe), Magnesium (Mg), Manganese (Mn), Nickel (Ni), Phosphorous (P), Potassium (K), Selenium (Se), Sulphur (S), Zinc (Zn), Nitrate (NO<sub>3</sub>-), Nitrite (NO<sub>2</sub>), Ammonium (NH<sub>4</sub>+), Total Nitrogen (N), Chloride (Cl-), Silicon (Si), pH, Electrical Conductivity (EC), and Brix.

**Frequency, time, and sampling:** It is recommended to take a sample once during vegetation and every two weeks during flowering growth. The sample shall be taken at the same time of day in each instance. Fully formed leaves with the leaflets and petiole intact should be taken. The laboratory needs about 80 grams for each sample (20-30 leaves). The distance between old and new leaves must be at least 25 inches.

**Transportation and shipping:** The samples must be prepared and analyzed as soon as possible. Contact AccuScience Labs for sample pickup or place the leaves in a vacuum sealed or conventional plastic bag with air pressed out. Samples must be kept cool (but not frozen) during shipping.



## REQUEST QUOTE

Contact us today for your  
SAP analysis quote.

40 S. Dewey St.  
St. Eustis, FL 32726  
**352.308.8020**

[info@accusciencelabs.com](mailto:info@accusciencelabs.com)