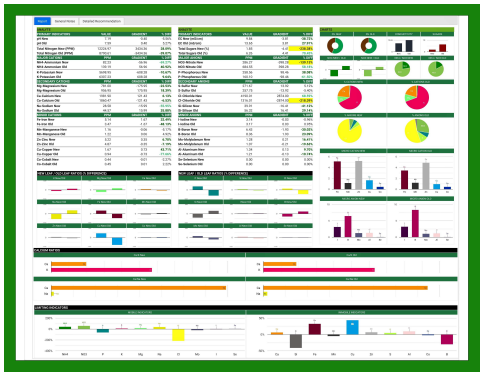
LEAF EXTRACT ANALYSIS INTERPRETATION



To maintain optimal plant growth, quality and yield, nutrients must be balanced and abundant. As plants grow, they strive to balance nutrients between new and old leaves. Generally, a balanced report shows slightly lower levels (5%) of nutrients in new leaves. A wide gradient between new and old leaves is a sign of an imbalance, which appear as excesses or deficiencies of nutrients. If mobile nutrients (see below) are not available in sufficient quantities, the plant will use old-leaf nutrients for new-leaf growth and the imbalance will appear as a ***lower ppm value in the old leaves***. If immobile nutrients (see below) are not available in sufficient quantities, the plant will grow slower and will not achieve full leaf and fruit size, fruit quality, and will appear as a ***lower ppm value on the new leaves***.

Be sure to ask Apical about these additional agronomy services:

Target Range Charting - Crop-specific graphic representation of lab report data compared to target nutrient ranges.

Detailed Recommendations - Prescribed nutritional and biological plan based on lab reports.

Total Sugars

- Total Sugars (T. S.) is a general indicator of plant health and vigor.
- Higher T. S. is usually indicative of good Calcium uptake and crops with desirable qualities (yield, quality, flavor, shelf life, etc.).
- Generally, as T. S. increases insect and disease pressure decrease.

Leaf Extract pH

- Lower pH readings usually indicate low levels of light, low microbial activity, a low concentration of cations, an excess of anions, or too much water.
- High pH often indicates excessive heat, an excess of cations, low total anions, or insufficient water.

Leaf Extract EC

- EC should gradually rise through the crop cycle.
- Low EC (< 5 mS/cm) can be caused by excess Phosphorous, Sulfur, compacted soils, or low soil pH.
- High EC (> 18 mS/cm) is often caused by excess Nitrate, Potassium, loose soils, or high soil pH.

Mobile Nutrients (Phloem) - *Nitrogen, Phosphorus, Potassium, Magnesium, Chloride, Iodide, Sodium, Molybdenum, Selenium.*

- Deficiencies of mobile nutrients are indicated by ***lower ppm readings in old leaves compared to new leaves***, due to nutrient translocation to new growth.
- These deficiencies can be caused by excessive levels of competing nutrients (antagonism), relative soil deficiencies, or low microbial activity in soil.
- An excess of a mobile nutrients is indicated by ***higher ppm readings in old leaves compared to new leaves,*** due to lack of complimentary nutrient synergy.
- Excesses are often caused by over-fertilization, loose soil, soil type, or plant bioaccumulation.

Immobile Nutrients (Xylem) - *Calcium, Silicon, Sulfur, Iron, Manganese, Zinc, Boron, Cobalt, Copper.*

- Deficiencies of immobile nutrients are indicated by ***lower ppm readings in new leaves compared to old leaves,*** as the plant is unable to transport immobile nutrients to new growth.
- Deficiencies are often caused by improper pH, temperature, ORP, soil-compaction or antagonism.
- An excess of immobile nutrients is indicated by ***higher ppm readings in new leaves compared to old leaves,*** due to lack of complimentary nutrient synergy.
- Deficiencies occur during periods of rapid growth, low micro-nutrient soil levels, and low microbial activity.
- Excesses are often caused by soil type and/or low pH.