# HOW TO READ THE DETAILED COMPARISON

## Imbalance Signals in Raw Data

One question that puzzled our founding members was: How do non-cultivated plants grow without being fertilized? To help understand this, we began sampling plants in nature to observe fluid dynamics through our Leaf (Sap) Analysis. What we found was a consistent balance was obtained by non-cultivated plants, that was nearly always absent in cultivated ones.

We developed our comparison report to highlight this departure from natural processes and act as a map to guide agronomic principles back into harmony with nature. This approach allows growers a unique perspective on how to access plant growth without (necessarily) increasing fertilization. By identifying imbalances and promoting balance within the plant, soil and water systems of the crop, fertilizer inputs can be managed in a more dynamic and accurate way that leads to enhancement of natural processes.

## GRADIENTS

The difference between the New/Old leaves, Deep/Shallow Soils and Source/Field Water are listed on the detailed comparison in the gradient column directly adjacent to the raw data. The gradient is the difference between the 2 sampling points raw data values

## PERCENTAGE DIFFERENCE (%DIFF)

The percentage difference column represents the gradient between the 2 sampling locations represented as a percentage of the total value in the sample. By referencing the total difference with the total values, the degree to which imbalance is present is highlighted.

## FONT CHANGES AND BACKGROUND HIGHLIGHTS IN % DIFFERENCE

The detailed comparison report uses a number of automated font changes to highlight imbalances in the data. Data imbalances represent opportunities for improvement in the system through raising, lowering, or moderating a specific point in the crop production system.

### Orange Font

This Font is used to indicate insufficient sample volume was submitted for this analyte. For best results, submit more volume in future samples.

### Black Normal Font

This font/background is used when data values are in general balance with a % difference <5%, this indicates data in balance.

### Light Green Bold

This font/background is used when the % difference between samples is between 50% to 100%, this indicates a MODERATE imbalance.

Black Bold Font with Yellow Background

This font/background is used if the % difference between samples is between 100% to 1000% indicates a LARGE imbalance.

Black Bold Font with Red Background

This font/background is used if the % difference between samples is> 1000%; this is indicative of a VERY LARGE imbalance.

Secondary Pie Charts

Each Detailed Comparison has the data grouped into elements that are similar in ionic charge, often compete with one another, or are antagonistic to each other.

Micronutrient Charts

Each leaf location's micronutrients are groups into elements that are similar (in ionic charge, often compete with one another, and/or are antagonistic to each other) and are graphically represented in bar graphs. *

Calcium Ratios-

Calcium to Sodium Ration (Ca:Na)

The Ca: Na Ratio is a graphical representation of soil salinity. The smaller the Ca: Na ration,t he higher the soil salinity.

Calcium to Potassium Ratio (Ca:K)

Ca/K is a ratios that affects plant cell wall strength and leaf turgor pressure. Ca:K is helpful to consider during plant root and can be helpful to monitor during early growth stages and inital fruit development when it is desired to be (higher) and lower during fruit sizing and production.

Limiting Indicators

The limiting indicators chart is a quick graphical summary of each element and their gradients normalized by percentage. This is grouped by both mobile and immobile elements and summarizes where to look for identifying toxicities/deficiencies based on their imbalance in the plant system.

*All forms of Aluminum are amphoteric in solution and frequently behave as a base due to oxygen exposure in agricultural systems.