

Interpreting Leaf Tissue Analysis

Nutrient	Optimum Range ²	All nutrients play many roles in plant physiology, ¹ but understanding each nutrient's primary roles ¹ in avocado cultivation can promote healthier yields throughout the orchard:
Nitrogen (N)	2.4 - 2.7% ³	Tree vigor, fruit sizing, vegetative growth
Phosphate (P)	0.1 - 0.15%	Root growth, fruit set
Potassium (K)	0.7 - 1.0%	Fruit sizing, heat tolerance
Calcium (Ca)	1.8 - 2.0%	Wind resistance, fruit retention, tree strength
Magnesium (Mg)	0.6 - 0.9%	Photosynthesis
Sulfur (S)	0.45 - 0.53%	Protein synthesis
Zinc (Zn)	50 - 80 ppm	Fruit size, tree vigor
Manganese (Mn)	110 - 145 ppm	Tree stress tolerance
Iron (Fe)	55 - 80 ppm	Photosynthesis
Boron (B)	40 - 65 ppm	Pollination, calcium uptake
Copper (Cu)	4 - 7 ppm	Stem elasticity, enzyme function
Chloride (Cl)	0.3 - 0.5%	Common in excess with poor soil drainage

Note: The solution for a low nutrient value is not always to “apply more fertilizer.” Other reasons that a tree can be low on a nutrient include, but are not limited to: too much or too little water, root rot, high fruit load, poor availability of nutrients, nutrient applied at the wrong time, wrong leaf age sampled, etc. Because of this, tissue sample results should be used as one of many factors influencing management decisions. Mission Produce is happy to guide you through tissue sample analysis and discuss how the results may indicate potential improvements for next season.

The information provided herein is for informational and educational purposes only. Any recommendations included herein shall not be construed as a guarantee of future results. We make no representations or warranties, and expressly disclaim any representations or warranties, as to the validity, accuracy, or completeness of the information contained herein.

End Notes:

1. Marschner, Horst, ed. Marschner's Mineral Nutrition of Higher Plants. Academic press, 2011
2. Optimum Leaf Nutrient Concentration Ranges for the Hass Avocado in California, FTG Summer 2020 (californiaavocadogrowers.com)
3. Missions field observation for preferred Nitrogen Range, CA. Avocado Commission range 2.2-2.5%