

## FRUIT ANALYSIS AS AN ALTERNATIVE TO LEAF ANALYSIS FOR DIAGNOSING IRON STATUS OF AVOCADO TREE

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Leaf chemical analysis generally does not represent the status of iron in avocado and other fruit trees. In order to find a better diagnostic tool for iron, an experiment was performed in a 'Hass' orchard where trees with different degrees of iron chlorosis existed. Four trees with no symptoms, four with moderate iron chlorosis and four with severe chlorosis were randomly selected. Fifteen leaves, 15 fruits and 40 inflorescences per tree were collected. Iron concentration in these tissues was measured via atomic absorption spectrophotometry after calcination and hydrochloric acid extraction. Chlorophyll concentration in the leaves was measured by spectrophotometry after extraction with ethanol. Iron concentration in the leaf and inflorescence did not show significant differences among trees. In contrast, iron in the fruit pulp was higher in the normal trees, and lower in the other trees according to their severity of chlorosis. Furthermore, chlorophyll concentration in the leaf (which was representative of the chlorosis intensity) appeared highly correlated with iron concentration in the fruit ( $R^2=0.84$ ), but poorly correlated with that in the leaf ( $R^2=0.22$ ) and that in the inflorescence ( $R^2=0.02$ ). These results suggest that iron analysis in the leaf and the inflorescence are unreliable indicators and support the postulation that iron analysis of fruit pulp is a promising tool for diagnosing the iron status of avocado trees.