

Distribution of macro and micronutrients in 'Rojo Brillante' persimmon and its influence on fruit quality

Nariane Q. Vilhena, Ana Quiñones, Paula Fernandez-Serrano, Alejandra Salvador

INTRODUCTION

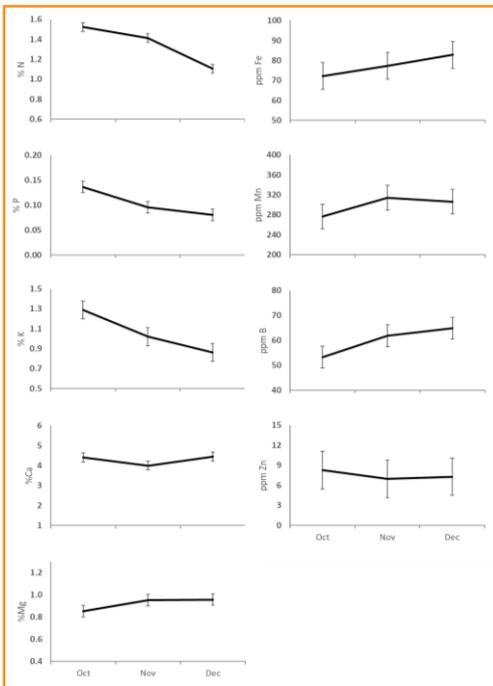
The cultivation of Persimmon cv. Rojo Brillante in Spain has exponentially growth for the last two decades. The nutritional requirements can vary among persimmon varieties and for 'Rojo Brillante' there are no studies that relate the nutrient status with fruit quality parameters. Therefore, the aim of this study was to evaluate the effect of macro- and micro-nutrients concentration in leaves and in fruit flesh on the fruit quality throughout ripening.

MATERIAL AND METHODS

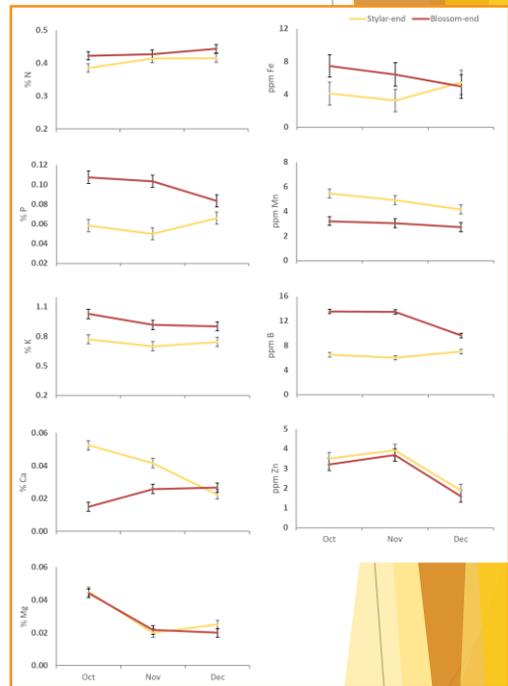
Three samplings of leaves and fruit were carried out between mid-October and mid-December. Nitrogen (N), Phosphorus (P), Potassium (K), Calcium (Ca), Magnesium (Mg), Iron (Fe), Manganese (Mn), Boron (B) and Zinc (Zn), were determinate in leaf and in two fruit flesh areas: blossom-end and styler-end. Moreover, the external color (CI=1000a/Lb, Hunterlab parameters), flesh firmness (N) and total soluble solids (°Brix) were evaluated on the fruit.

RESULTS

Leaf



Fruit



Vertical bars represent Least Significant Differences (LSD) intervals ($p \leq 0.05$) when comparing all the analyzed factors.

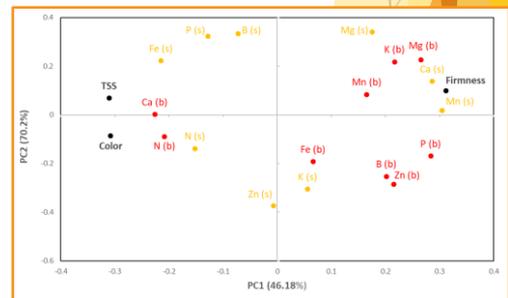
CONCLUSIONS

In leaf, throughout harvest, a decrease in N, P and K concentrations and a slight increase in Mg and Fe were found. No significant changes in Ca, Mn, B and Zn concentrations were detected.

As for the fruit, N, P, K and B showed higher concentrations in the blossom-end than styler-end area, without great changes along the studied period.

In relation to Mg and Zn, a decrease during harvest period was observed, without differences between flesh areas. Ca concentration decreased in the styler-end while an increase occurred in the blossom-end area along harvests, suggesting the Ca translocation inside the fruit.

The flesh firmness was correlated with the Ca concentration in the styler-end area, while external color and total soluble solids was correlated with Ca concentration in the blossom-end and with N concentration in both flesh areas measured.



Principal component analysis of the internal quality parameters and micro and macro elements in Styler-end (s) and blossom-end (b) of 'Rojo Brillante' fruit during harvest advance.