Evaluation of stomatal density and leaf venation of mango cultivars with agronomic interest in the Canary Islands

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The leaf vein is the structure for the physical support and transport of molecules in the leaf, which contributes to its growth and development. Therefore, leaf venation is strongly related to hydraulic conductance and gas exchange. In recent years, the development of polyploid cultivars of fruit trees has gained momentum in certain species; however, there are few studies about polyploidization in mango (*Mangifera indica* L.) and the effects on its physiology. In this study, adult trees of the cultivars Kensington, Torbert, Manga Blanca and Turpentine, with different ploidy and interest for the Canary Islands, were selected and sampled. A foliar clearance protocol was carried out for the venation study, and for the stomatal analysis, prints were taken with nail lacquer that were visualized and analyzed under a microscope. The results obtained indicate that diploid cultivars presented a higher stomatal density than tetraploids. The average stomatal density in the diploids was 650 stomata per mm^2; while in tetraploid was 450 stomata per mm^2. A lower stomatal density can limit the leaf capacity to exchange gases with the environment, which in dry conditions could help reduce water loss and improve plant survival. The length of veins per area was also greater in diploid leaves, which may indicate a greater capacity of the leaf to transport water and nutrients from the roots to the aerial parts. Finally, the implications of these changes with ploidy will depend on environmental conditions and the ability of the plant to adjust its physiology to environmental conditions.