

**Title:****Variations in the functional metabolites composition in golden berry fruits according to ripeness stages, and the effect of exogenous methyl jasmonate application on mature fruits.**

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Physalis peruviana L. (golden berry) is an exotic tropical fruit valued for its high content of bioactive compounds with antioxidant properties. Functional metabolites such as epicatechin, tocopherols, and β -carotene play crucial roles in its nutritional and health-promoting potential. Understanding their variation during fruit development and the influence of elicitors like methyl jasmonate (MeJA) is essential for improving fruit quality and postharvest handling. This study aimed to (i) evaluate changes in the concentration of selected metabolites—epicatechin, α -tocopherol, δ -tocopherol, γ -tocopherol, and β -carotene—at immature and mature fruit stages, and (ii) determine the effect of MeJA application on their accumulation in mature fruits. Samples were collected at two developmental stages, and mature fruits were treated with MeJA to assess its effect. Metabolite levels were quantified using High-Performance Liquid Chromatography with Diode Array and Fluorescence Detection (HPLC-DAD/FLD). Results showed that fruit development significantly influenced metabolite concentrations: β -carotene and tocopherols generally increased with maturation, while epicatechin peaked at intermediate stages. MeJA treatment enhanced the accumulation of several metabolites, particularly α - and γ -tocopherol, highlighting its potential as a postharvest elicitor to improve nutritional quality. These findings underscore the importance of developmental stage and elicitor application in optimizing the functional value of golden berry fruit.

Biography

Vanessa Suaza-Gaviria is a biologist with a master's degree, and now a doctoral candidate in Biotechnology from the Universidad de Antioquia, Medellín - Colombia. She has worked in developmental biology with hemiparasitic plants (DOI: 10.1086/687280; DOI: 10.3732/ajb.1600253), and also tested antimicrobial and radicals-scavenging activities of these plant extracts (DOI: 10.37360/blacpma.23.22.2.13; DOI: 10.1002/cbdv.202200830). She continues studying functional metabolites in plants, this time in exotic tropical fruits such as golden berry fruit.

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