

Insights into exogenous melatonin associated with phenylalanine metabolism in postharvest strawberry

Lingling Pang, Yan Wu, Yanfang Pan, Zhaojun Ban, Li Li and Xihong Li

Postharvest Biology and Technology, Volume 168, October 2020, 111244

Abstract

Melatonin is a kind of multifunctional hormone, analogous to indoleacetic acid in structure. To uncover the relationship between exogenous melatonin and the phenylalanine pathway, the liquid chromatography mass spectrometry (LC-MS) was performed to quantify endogenous melatonin and individual anthocyanin content. RT-qPCR was used to explore the expression of primary genes involved in anthocyanin biosynthesis. In the present study, we found that the morphology and endogenous melatonin content of strawberries showed a significant improvement and increase in the M50 compared with the other groups. Additionally, anthocyanin accumulation and genes up-regulation, in both the M50 and the M100, all revealed higher levels than that of the control. In conclusion, this work revealed the positive relationship between exogenous melatonin and the phenylalanine metabolism of strawberries.