

Formation of and changes in phytohormone levels in response to stress during the manufacturing process of oolong tea (*Camellia sinensis*)

Lanting Zeng, Xuewen Wang, Yinyin Liao, Dachuan Gu, Fang Dong and Ziyin Yang

Postharvest Biology and Technology, Volume 157, November 2019, 110974

Abstract

As important upstream signals, phytohormones regulate the plant volatiles' biosynthesis under various stresses. The formation of some characteristic aromas during the manufacturing process of oolong tea (postharvest stage) is due to the defense responses of tea leaves to stress. This study investigates the formation of phytohormone in response to stresses during the manufacturing process of oolong tea. Jasmonic acid (JA) and abscisic acid (ABA) levels enhanced during the manufacturing processes (enzyme-active stage) of oolong tea. Wounding from plucking activated JA synthetic gene expression, resulting in increased levels of JA ($p \leq 0.01$), and continuous wounding from the turn over stage further enhanced JA synthesis ($p \leq 0.05$). Dehydration stress during the withering stage activated ABA synthetic gene expression resulting in an increase of ABA ($p \leq 0.01$). The study advances the understanding of key upstream signals, JA and ABA, during the manufacturing process of oolong tea.