

Salicylic acid reduces the incidence of *Phomopsis longanae* Chi infection in harvested longan fruit by affecting the energy status and respiratory metabolism

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Postharvest Biology and Technology, Volume 160, February 2020, 111035

Abstract

This study investigated the effects of salicylic acid (SA) on the disease development, respiration rate, energy status, and respiratory metabolism in *Phomopsis longanae* Chi-inoculated longans. SA treatment reduced the fruit disease index and respiration rate of *P. longanae*-inoculated longans as compared to the fruit with mere inoculation. SA treatment suppressed the decline of energy charge, decreased the activities of PGI, SDH and CCO, but boosted the G-6-PDH+6-PGDH and NADK activities. Meanwhile, the NAD and NADH contents were decreased, but NADP and NADPH contents were increased. These findings demonstrated that SA could be used to inhibit disease development in harvested longans because SA treatment helped maintain a high energy charge level, decreased respiration rate and respiratory pathways like EMP-TCA cycle and CCP, but increased PPP respiratory pathway. This study indicated that the SA treatment was a facile and effective way to retard the disease development of postharvest longans.