

# **EFFECTS OF EPIGALLOCATECHIN-3-GALLATE (EGCG) AND CYTOKININ ON POSTHARVEST ATTRIBUTES OF LITCHI FRUIT BY MODULATING ANTIOXIDANT ACTIVITY AND CHLOROPHYLL METABOLISM AFTER HARVEST**

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Litchi fruit pericarp is susceptible to browning after harvest. We evaluated the treatments of epigallocatechin-3-gallate (EGCG) and forchlorfenuron (CPPU) to delay the development of browning in litchi fruit stored at room temperature. The results showed that the development of pericarp browning and decrease of chlorophyll could be inhibited, and the increase of malondialdehyde (MDA) content during storage. As compared to control, the content of pericarp anthocyanins, flavonoids, and the total phenols maintained higher levels; and the decrease of antioxidant activity of 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging capacity and reducing power were slowed down in treated fruit. The enzyme activity of polyphenol oxidase (PPO), peroxidase (POD) and anthocyanase (ACN) related to oxidation of polyphenols were depressed by the combined treatments. Furthermore, the relative expression of the polyphenol oxidase and chlorophyll related genes correlation analysis revealed that the content of phenols in the pericarp negatively affected the changes in the browning index, and was positively related to the DPPH radical scavenging capacity. The combined treatments of EGCG and CPPU exhibited potential effects in delaying the pericarp browning of green mature litchi fruit by maintaining the content of polyphenols, regulating the chlorophyll catabolism after harvest.

**Keywords:** Litchi fruit; Pericarp browning; Epigallocatechin-3-gallate; Cytokinin; Antioxidant activity; Chlorophyll catabolism