

Abstract

Free radical scavenging capacities of strawberries treated with methyl jasmonate (MJ), allylthiocyanate(AITC), essential oil of *Melaleuca alternifolia* (tea tree oil TTO), and ethanol(EtOH) were investigated. All treatment reduced the severity of decay during storage at 10°C compared to the control. Most of these treatment enhanced antioxidant capacity and free radical scavenging capacity, except AITC treatment. The most effective treatment for this study was MJ treatment. MJ treatment has the highest antioxidant capacity expressed as ORAC values after 7 days of storage (40.77 MMOL TE/g fresh weight). MJ treatment promoted ABTS scavenging activity and showed the highest percent inhibition for DPPH radicals among all the treatment (ED₅₀ is 31.79 mg for 7 day after storage). MJ treatment also increased scavenging capacities on superoxide radical (O₂⁻), hydrogen peroxide (H₂O₂), hydroxyl radical (OH), and singlet oxygen(O₂) compared with control. These results indicated that natural volatile compounds tested in this study, except AITC, promoted the antioxidant capacity and scavenging capacity of most major free radicals scavenging capacity of most major free radicals and help increase the resistance of strawberries to decay.