

Efficiency of low dose cyanocobalamin immersion on bioactive compounds contents of ready to eat sprouts (sunflower and daikon) and microgreens (red-amaranth) during storage

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Abstract

The objective of this study was to investigate the efficiency of low dose cyanocobalamin (vitamin B₁₂) immersion on biologically active compounds improvement of baby vegetables such as sunflower sprouts, daikon sprouts and red-amaranth microgreens during storage. The baby vegetables were dipped in water (control), 0.05 or 0.1 μM cyanocobalamin for 5 min and then stored at 4 ± 1 °C for 9 d. We found that cyanocobalamin immersion, especially at 0.1 μM, could induce antioxidant capacity and certain biologically active compounds such as total phenols and flavonoids concentrations of all baby vegetables when compared to control samples. Cyanocobalmin delayed the loss of ascorbic acid concentration in sunflower sprouts but had no influence on the change in ascorbic acid concentration of daikon sprouts and red-amaranth microgreens during storage. The treatments did not affect the changes in total chlorophylls and carotenoids concentrations of sunflower and daikon sprouts during storage. Interestingly, 0.1 μM cyanocobalamin immersion enhanced betacyanin, betaxanthin and total betalains concentrations of red-amaranth microgreens during storage. These results indicated that low dose cyanocobalamin, vitamin B₁₂, is a new potential natural agent improving health beneficiary bioactive compounds in ready to eat baby vegetables during cold storage.