Title Climate changes and potential impacts on postharvest quality of fruit and vegetable crops: A review

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Abstract

Temperature increase and the effects of greenhouse gases are among the most important issues associated with climate change. Studies have shown that the production and quality of fresh fruit and vegetable crops can be directly and indirectly affected by high temperatures and exposure to elevated levels of carbon dioxide and ozone. Temperature increase affects photosynthesis directly, causing alterations in sugars, organic acids, and flavonoids contents, firmness and antioxidant activity. Carbon dioxide accumulation in the atmosphere has directly effects on postharvest quality causing tuber malformation, occurrence of common scab, and changes in reducing sugars contents on potatoes. High concentrations of atmospheric ozone can potentially cause reduction in the photosynthetic process, growth and biomass accumulation. Ozone-enriched atmospheres increased vitamin C content and decreased emissions of volatile esters on strawberries. Tomatoes exposed to ozone concentrations ranging from 0.005 to 1.0 μmol/mol had a transient increase in β-carotene, lutein and lycopene contents.