

Changes in biochemistry of fresh produce in response to ozone postharvest treatment

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Abstract

Ozone is a triatomic molecule of oxygen well-known as a powerful disinfectant because of its higher oxidation potential. Ozone has recently gained more interest especially from producers of organic fresh horticultural products. This happened after it was recognized as a generally safe disinfectant of fresh fruits and vegetables. One of the major properties of ozone that makes it an effective postharvest treatment is its ability to disinfect fresh produce effectively without leaving residues on the surface, mainly because it decomposes to form oxygen. Ozone is one of the successful postharvest treatments, however; its mode of action is not well documented. The currently understood mode of action of ozone is linked with antimicrobial properties, however, several studies revealed the biochemical impact of ozone as a postharvest treatment of horticultural fresh produce. Little has been done in terms of critically reviewing the biochemical impact of ozone as a postharvest treatment. Furthermore, among the few reviews on ozone, there is little or no detailed information regarding the effect of ozone on antioxidants, as the major components of the human diet in fruit and vegetables. Therefore, in this review, the mode of action of ozone as a postharvest treatment has been discussed, with a more focus on its biochemical impact on antioxidants as major components of fresh produce diet.