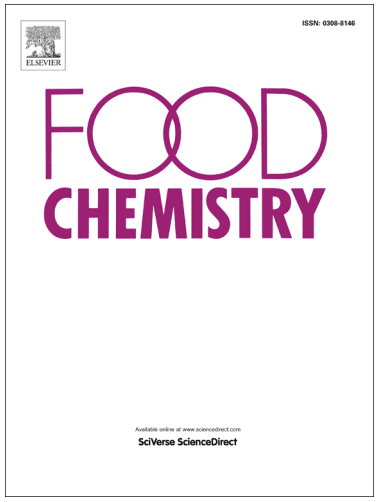

Levels of terpenoids, mangiferin and phenolic acids in the pulp and peel of ripe mango fruit influenced by pre-harvest spray application of $FeSO_4$ (Fe^{2+}), $MgSO_4$ (Mg^{2+}) and $MnSO_4$ (Mn^{2+})

Mekhala Dinushi Kananke Vithana, Zora Singh, Stuart Keith Johnson

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Mekhala Dinushi Kananke Vithana [a], Zora Singh [a] and Stuart Keith Johnson [b]

[a] Curtin Horticulture Research Laboratory, Department of Environment and Agriculture, Faculty of Science and Engineering, Curtin University, GPO Box U1987, Perth 6845, Western Australia.

[b] School of Public Health, Curtin Health Innovation Research Institute, Faculty of Health Sciences, Curtin University, GPO Box U1987, Perth 6845, Western Australia.

*Corresponding author (e-mail: Z.Singh@curtin.edu.au; Tel +61892663138; Fax +61892663063)

ABSTRACT

Fe^{2+}, Mg^{2+} and Mn^{2+} are enzyme cofactors in terpenoids biosynthesis. Effects of pre-harvest spray of $FeSO_4$, $MgSO_4$ and $MnSO_4$ (0.2 % and 0.3 %) 30 d prior to harvest on the levels of terpenoids and phenolic compounds in ripe mango fruit were investigated. All treatments significantly increased lupeol in the peel compared to control and it was highest in pulp of 0.3 % $FeSO_4$-treated fruit. Spray of each nutrient (0.3 %) increased total carotenoids in the pulp. Mangiferin in pulp was significantly higher in the fruit treated with 0.2 % $FeSO_4$, $MgSO_4$ and $MnSO_4$ compared to control and 0.3%. Concentrations of gallic, ferulic and caffeic acids in the peel and chlorogenic acid in pulp and peel were highest in fruit sprayed with 0.2 % $FeSO_4$. In conclusion, pre-harvest spray of $FeSO_4$, $MgSO_4$ and $MnSO_4$ regulates