

Title Avoiding the paleness of pomegranate arils by preharvest application of salicylic acid and potassium sulphate

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Abstract

The physiological disorder of aril paleness, though to occur due to oxidative stress, in pomegranate threatened the popularity of this fruit. Based on the results of a preliminary experiment on pomegranate tree, a factorial experiment was designed and consists of salicylic acid (0, 0.3 and 0.6 mM) and potassium sulphate (0, 0.5 and 1 %). The prepared concentrations of mentioned treatment were foliar sprayed on trees 9 and 13 weeks after full bloom. Results showed that these compounds could alleviate the aril paleness of fruit, manifested by higher chroma of arils and peel of pomegranate and maintain the overall quality of fruit than control. In addition, total phenolics and antioxidant activity increased in fruit of treated tree by potassium sulphate at harvest while the lowest values of these parameters were observed in control. Also the result of measuring photosynthetic parameters and pigments showed that treated plants have higher Fv/Fm, pi and some pigment of plant compared to control. Thus preharvest treatments with salicylic acid and potassium could be considered as suitable tools to avoid paleness of pomegranate arils with higher bioactive compounds and antioxidant activity as compared to control fruit.