Title Metabolic response to UV-C treatments on minimally processed pomegranate arils

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Abstract

Pomegranates have a high amount of phenolic compounds and high antioxidant activity, however due to the difficulty to peel its consumption is not very high. Ready to eat pomegranate arils could be a way to increase its consumption but for this to be possible there is the need to find a safety and environmentally friendly method to control food-borne pathogens and preserve the nutritional properties. UV-C illumination could be a solution for the preservation of the minimally processed arils. UV-C technology has direct effect on the pathogens and indirect effect by the stimulation of host-defense responses. One of the possible mechanisms of host resistance is the production of certain enzymes by fruits. In this research the metabolic response to different UV-C treatments on pomegranate arils was studied. After UV-C illumination total phenol, titratable acidity and soluble solids were evaluated. The UV-C illumination doses applied to pomegranate arils were 4.5, 6.5 and 8.5 KJ/m^2. Non-illuminated arils were used as the control treatment. The two storage temperature were 2°C and 6°C. The soluble solids content and citric acid percentage didn't seem to be affected by the UV-C illumination. The experiment also showed that UV-C illumination has an effect in the increase of phenol content in pomegranate arils during the storage and shelf life.