

Screening of Techniques for the Extraction of Arils from Wild Pomegranate (*Punica granatum* L.) Fruit

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Abstract—Wild pomegranate (*Punica granatum* L.) is a wild fruit of mid hill regions of Himalayas. Besides a rich source of organic acids like citric acid, malic acid, oxalic acid etc., it is also considered as a good source of antioxidants because of the presence of various compounds like phenols, anthocyanins, ascorbic acid etc. in it. Since it is quite difficult to extract arils from fresh fruits and no aril extractor is available in market till date, thus, studies were conducted to evaluate alternative methods for the extraction of arils from this fruit. Before manual extraction of arils, partial drying of fruits (less than 10% moisture loss) in three different drying modes like mechanical cabinet drier, solar tunnel drier and open sun for varying time-temperature combinations was done. Exposure of fruits to time-temperature combination of 40 °C for 6 h in mechanical cabinet drier was found best followed by solar tunnel drier (36-44 °C for 12 h) and open sun (28-30 °C for 36 h) on the basis of minimum time taken for partial drying, ease of separation of arils, best physical and sensory attributes of extracted arils. Manual extraction of arils from cabinet dried fruits of one kg also took minimum time (15.09 minutes) in comparison of solar tunnel (16.05 minutes) and open sun (17.30 minutes) dried fruits by a single unskilled worker, whereas, maximum time (30.05 minutes) was taken to extract arils from fresh wild pomegranate fruits.

Keywords: Partial drying, mechanical cabinet drier, solar tunnel drier, open sun drying, ease of separation of arils, extraction of arils.