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ENGINEERING PROPERTIES AND SHELF LIFE OF FRESHLY HARVESTED INDIAN KIWI CULTIVARS FOR FACILITATING PRIMARY PROCESSING

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ABSTRACT

The present study deals with the engineering properties of three Indian kiwi cultivars. These engineering properties will facilitate the farmers, and industry personals involve in handling, packaging and transportation of fresh harvested fruit. The complete information on physical, mechanical, thermal and biochemical properties of three Indian kiwi cultivars were presented in this paper. This knowledge may be utilized to design and develop modern machineries for primary processing, and packaging of fresh kiwifruit. The shelf life study data also provided in this paper which will help the growers and processors for safe handling, packaging and transportation of the fruit. The physical dimensions viz. length, width and thickness, mean diameters, surface area, volume, sphercity, static coefficient of friction on different materials were measured for all the three Indian cultivars. Significant ($p<0.05$) difference for aspect ratio with Hayward and Monty was observed. Bruno was bigger and heavier than others cultivars. Mean diameters (*GMD, AMD and EMD)* were varying less than 10%. The mechanical properties viz. firmness, hardness, adhesiveness, adhesive force and total positive area for peeled and unpeeled Hayward, Bruno and Monty. Thermal properties i.e. thermal conductivity, specific heat capacity, thermal diffusivity and latent heat of fusion and biochemical properties i.e. moisture, pH, titrable acidity and total soluble solids were also measured in this study. Significant ($p<0.05$) for total positive area was observed for Bruno with Hayward and Monty was observed. No significant ($p>0.05$) difference for moisture and sphericity was observed between Hayward and Monty.