Abstracts

FOR

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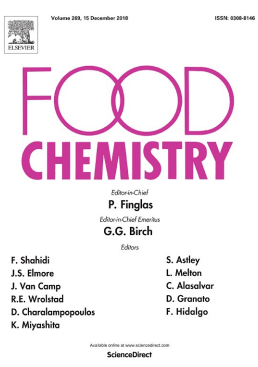

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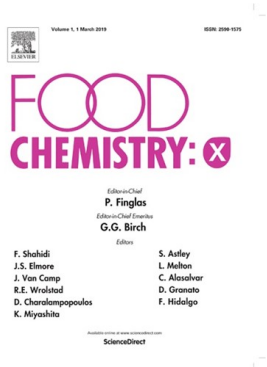

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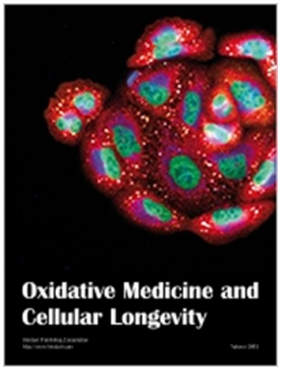

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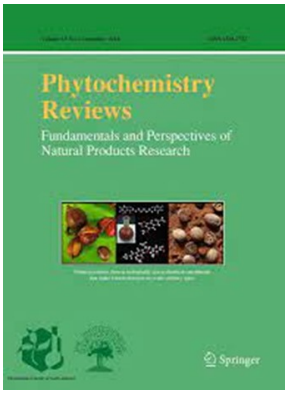

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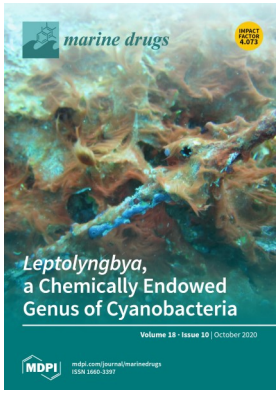

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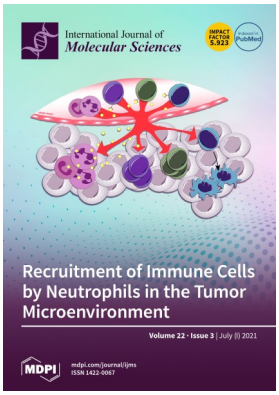

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Nutritional profile of papaya peels, pulp, and seeds (*Carica papaya* L.)

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Papaya (*Carica papaya* L.) is native to tropical America and is one of the most widely cultivated fruit plant in the world, especially in tropical areas where the average annual temperature is 25 °C. Due to its sensory characteristics, nutritional value, and functional properties (digestive and laxative), papaya is a very acceptable fruit. Nevertheless, after industrial processing peels and seeds are discarded generating waste that could be reused in the recovering of important molecules. Thus, the objective of this work was to determine the nutritional composition of papaya comparing the differences in the nutritional profile of the peels, pulp, and seeds. To achieve these results, the crude fat (Soxhlet extractor), protein (Macro-Kjedahl), ash (AOAC methodology 923.03), soluble sugars (HPLC-RI), fatty acids (GC-FID) and organic acids (HPLC-DAD) were determined. Regarding the results, for protein the values were relatively higher in seeds (43.6 ± 0.1 g/100 g dw) when compared to the peels (15.8 ± 0.3 g/100 g dw) and pulp (4.6 ± 0.2 g/100 g dw). Regarding fat, the values were also higher in the seeds (23.5 ± 0.9g/100 g dw) in comparison to the peels (1.46 ± 0.02 g/100 g dw) and pulp (0.78 ± 0.05 g/100 g dw). As for ash content, the values were higher for peels (10.6 ± 0.1 g/100 g dw), followed by seeds (8.0 ± 0.8 g/100 g dw) and pulp (4.7 ± 0.4 g/100 g dw). The carbohydrate content was higher in the pulp (89.9 ± 0.7 kcal) followed by the peel (72.2 ± 0.5 kcal) and seeds (25.0 ± 0.3 kcal). Three sugars, fructose, glucose, and sucrose were found, except for seeds that did not show the presence of sucrose. Glucose was the most abundant sugar in all fruit parts (56 ± 3 g/100 g dw for pulp; 21±1g/100 g dw for peels; 10±1 g/100 g dw for seeds). A total of 20 fatty acids were found, where linolenic acid (20.3 ± 0.4%) was the most abundant in the peels, palmitic acid (54.69 ± 0.02%) in the pulp and oleic acid (68.5 ± 0.1%) in the seeds. Four organic acids were quantified, where citric acid had the highest values in the seeds (8.0 ± 0.3 g/100 g dw), peels (3.88 ± 0.04 g/100 g dw) and pulp (2.00 ± 0.01 g/100 g dw), respectively. In general, it can be concluded that papaya has higher nutritional content in the seeds and peels when compared to the pulp, which is normally the consumable part, justified by its sweet taste and sensory aspects. However, the use of the residues of the peels and seeds would be of great value, since it has a significant nutritional potential reducing waste and enabling the creation of new products. In addition, future studies will be carried out testing its antimicrobial, ant-proliferative and antioxidant properties in cell-based assays, in order to further improve the bioactive quality of this fruit.

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