

POSTHARVEST TECHNOLOGY OF VEGETABLE PLANTS BY-PRODUCTS

By

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ABSTRACT

Fruit and Vegetable peels wastes are generated from household and food-processing industries. Up to one third of the volume of fruit and vegetables are in form of peels, seeds, and skins, which is discarded during preparation and processing resulting in waste, i.e. by-products. There is a potential for conversion of these wastes into useful products or even as raw material for other industries. Using these wastes in different potential applications in order to eradicate them from the environmental and reduce solid-waste handling, which is able to add some values to these wastes.

This study has been done on three by-products of vegetable crops. Aimed to identify the nutritional quality of peels of watermelon, eggplant and potato with regards to its content of antioxidants compounds, fiber, protein, fat, carbohydrate and nutrition minerals. Besides to screening of phytochemical compounds and food safety analyzes. In addition to, feasibility study of using these by-products as a substitute for flour in making some baked products and making sensory evaluation of these products.

The present results cleared that watermelon rind is a good source of the dietary fiber (~ 16%) followed by eggplant peels (~ 14%) and potato (~ 8%); and nutrition minerals - especially potassium which was 5.4 % in eggplant peels, 5.2 % in potato peels and 4.1% in watermelon rind. for antioxidants compounds, watermelon was the higher content followed by eggplant then potato. And according to food Safety tests results, it could be said that all fresh samples under study were safe and can be used in food products.

These by-products dry powder was used partially substituted for wheat flour in produced bakery products at different levels (5, 10 and 20%).

Sensory evaluation has been done for these products, which confirmed the overall acceptability of the product. Thus, these vegetable by-products can be used in the manufacture of products as nutritional supplements. It is preferable to use fresh vegetable peels, not stored, and in the case of storage, they are stored in polyethylene bags and at -20° C.

Then, this study approved the studied peels powder could be used for bakery manufacturers as a cheap source for substitute for wheat flour to produce baked food products that contain many ingredients that have beneficial effects on human health and at low costs.

Keywords: Watermelon rind, Eggplant peel, Potato peel, Nutritional components, Flour substitution and Evaluation.

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