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A REVIEW

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# Production of by-products from wastes of food processing industries

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## ABSTRACT

**The specifically deals with the waste produce through industry used to the production of high value product likes pectin, phenolic compounds, compost, methane gas, growing media mixture, allelopathic compounds, dye compound (pigments), biomass production (fungus growth) as well as citrus pulp and apple pomace used to bioethanol production and by-products can result to exportable commodities, provide additional source of income to producers, generate employment and create investment opportunities for the country in future.**

**KEY WORDS :** Food processing, By-product, Wastes

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India is the 2nd largest producer food in worlds. Total cultivated area of fruits and vegetables is around 12 M. hectare (*i.e.* 7% of total cultivation area). Main fruits produced in India are mango, banana, citrus, guava and apple; these account for almost 75 – 80% of total fruit production. The country produces around 140 M. tones of fruits and vegetables p.a. and accounts for about 10 % of the global production in fruits and about 13.7 % of global production in vegetables. India produces over 60 % of world's mangoes and 12 % of world's bananas. About 30-40% of fruits production go waste due to lack of proper processing and packaging. Only 2 - 3 % of the produce is processed in India as against Malaysia at - 83 %, Thailand - 72 % and Brazil - 70 %. Total number of fruits and vegetables processing units are 5200 found in India.

Sudhakar and Maini (2007) found that characterization of mango peel pectin. The peels are a rich source of pectin due to their high uronic acid, galactose, arabinose and rha mnose content. The majority of the pectin comes from cirtus peel and apple pomace. With a good recovery yield, a high average molar mass and intrinsic viscosity and a high degree of methylation, ammonium oxalate extracted mango pectin present good characteristics to be exploited industrially for their gelling properties.

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### Pectin and polyphenol production from mango peel waste:

Sudhakar and Maini (2007) finding that the most potential extraction media was the ammonium oxalate for pectin production through mango peels. The ammonium oxalate extraction method produced the best results with higher yields, high molecular mass, and intrinsic viscosity.

HCl was found to partially degrade the pectin, while the water method produced poor yields. Despite these differences, the recovered pectin from all the methods were highly methylated, forming gels with large amounts of sugar (more than 55%) and acid.

An efficient method for manufacture of pectin from Totapuri mango peels was standardized by using 0.05N HCL that govern the recovery and quality of pectin. Among the different organic and inorganic acids, 0.05 N HCl was found to be the best for recovery of pectin from mango peels. Optimum yield of pectin was obtained by taking two extractions each for one-hour duration employing a peel: extractant ratio of 1:2 and by alcohol precipitation method.

Sirisakulwa *et al.*, (2010) reported that susceptibility