

# Bioactive Compounds and Sugars from Mango Processing Waste

## Salient features

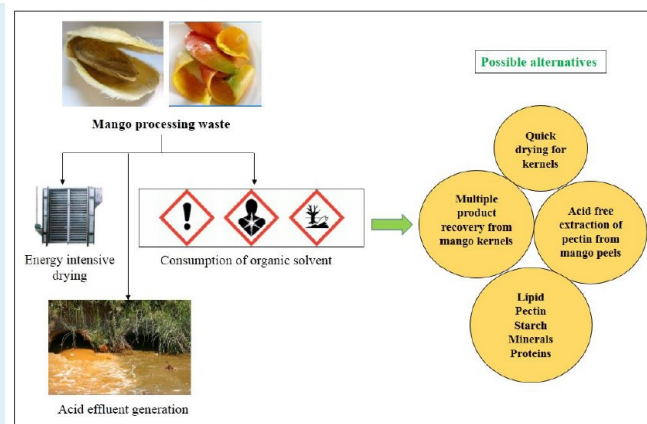
- Wet fractionation of mango kernels to separate lipids, starch and proteins
- Hydrothermal treatment and sonication method in presence of lemon juice to extract pectin from mango peels.
- Solid co-product stream of pectin rich in cellulose and lignin
- Liquid co-product stream of pectin with a cocktail of a significant quantity of polyphenols and reducing sugars..

## Advantages

- ✓ The bioactive compounds and sugars can be incorporated into food products as nutraceuticals.
- ✓ Eco-friendly, safer and mineral acid free treatment for the extraction of pectin.



Dry and wet fractionation for mango kernels



Green processing of mango processing waste

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<i>Year</i>	2013-14
<i>Source of funding</i>	MoFPI
<i>More information</i>	<p><b>Status of commercialization / Patent / Publication</b></p> <p>Arora, A., Banerjee, J., Vijayaraghavan, R., MacFarlane, D. and Patti, A.F. 2018. Process design and techno- economic analysis of an integrated mango processing waste biorefinery. <i>Industrial Crops and Products</i>, 116: 24-34.</p> <p>Banerjee, J., Singh, R., Vijayaraghavan, R., MacFarlane, D., Patti, A.F. and Arora, A. 2018. A hydrocolloid based biorefinery approach to the valorization of mango peel waste. <i>Journal of Food Hydrocolloids</i>, 77: 142-151.</p> <p>Banerjee, J., Singh, R., Vijayaraghavan, R., MacFarlane, D., Patti, A.F. and Arora, A. 2017. Bioactives from fruit processing wastes: Green approaches to valuable chemicals. <i>Food Chemistry</i>, 225: 10-22.</p> <p>Banerjee, J., Vijayaraghavan, R., Arora, A., Macfarlane, D. and Patti, A. F. 2016. Lemon juice based extraction of pectin from mango peels: Waste to wealth by sustainable approaches. <i>ACS Sustainable Chemistry and Engineering</i>, 4: 5915-5920.</p> <p>Banerjee, J., Patti, A. F., Macfarlane, D., Vijayaraghavan, R., Singh, R. and Arora, A. 2016. Effect of drying methods and extraction time temperature regime on mango kernel lipids. <i>Int. J. Food Nutr. Sci.</i> 3: 1-10</p>