

Sustainable Mechanical Extraction of edible oils through Green Chemistry Principles

Mr. Rabindra Gandhi

**Managing Director, United Engineering Pvt. Ltd , New Delhi
rabigandhi@uec-india.com**

Screw Pressing or expeller pressed oils are gaining attraction again globally. It's the reduction of oil and where the carbon footprint is less as compared to solvent extraction though there is still a trade off. This paper investigates the integration of Green Chemistry principles in the mechanical extraction of edible oils. Emphasizing energy efficiency, minimal waste, and non-toxic processing, this study examines the design and optimization of mechanical extraction techniques to maximize yield and quality. The following key points are covered in this presentation.

Some typical data will be presented on the developments in mechanical extraction using higher capacity presses for the extraction of oil as a second press with feed from a Ghani with high moisture in the meal. The results are extremely encouraging as they show the reduction in oil with much lower consumption of power maintaining the high pungency in the oil

The second aspect covered is the advantages of high capacity screw presses (500 TPD and higher) for enhanced yields of cottonseed oil

The third case study would be the development of screw presses for reduction of oil in silk worms and the issues faced to extract the protein.