

## **Economics of Plant Oil Recovery: A Review**

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**Project Goals: In this study, plant oil production from solvent extraction and mechanical pressing, including on-farm oil production, industrial and commercial operations are investigated. The goal is to provide an overview of plant oil production cost to form the basis for evaluating oil applications in the oleochemical industry.**

Plant oil is a major agricultural commodity used in food, feed, and chemicals. Presently, plant oil is produced from oil seeds either using mechanical pressing or solvent extraction. These technologies have steadily improved, resulting in increased oil recovery; however, production cost is especially important for a commodity. Herein, the costs associated with on-farm pressing, industrial mechanical pressing, and solvent extraction are reviewed. Solvent extraction is the dominant technology because it offers high oil recovery and low production cost. In contrast, industrial mechanical pressing has the highest production cost because of its low oil yield; nevertheless, the simple process results in the lowest fixed capital investment. For on-farm pressing, lower material cost results in lower production cost than industrial mechanical pressing. Additionally, credits from co-products play an important role in determining total revenues, especially for mechanical pressing. Therefore, broadening the applications and values of the co-product is also critical for profitability for the plant oil industry.

**Keywords:** Plant oil production, On-farm pressing, Industrial mechanical pressing, Solvent extraction, Production cost.

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