

## Oil Extraction from Sunflower Seed Using Green Solvent 2-Methyltetrahydrofuran and Isoamyl Alcohol

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**Abstract :** The objective of this study was to choose and determine a green solvent system with similar extraction efficiencies as the traditional Bligh and Dyer method. Sunflower seed oil was extracted using Bligh and Dyer method with 2-methyltetrahydrofuran and isoamyl using alcohol ratios of 1:1; 2:1; 3:1; 1:2; 3:1. At the same time comparative experiments was performed with chloroform and methanol ratios of 1:1; 2:1; 3:1; 1:2; 3:1. Comparison study was done using 5 replicates (n=5). Statistical analysis was performed using Microsoft Office Excel (Microsoft, USA) to determine means and Tukey's Honestly Significant Difference test for comparison between treatments ( $\alpha = 0.05$ ). The results showed that using classic method with methanol and chloroform presented the extraction oil yield with the values of 31-44% (w/w) and values of 36-45% (w/w) using green solvents for extractions. Among the two extraction methods, 2 methyltetrahydrofuran and isoamyl alcohol ratio 2:1 provided the best results (45% w/w), while the classic method using chloroform and methanol with ratio of 3:1 presented a extraction oil yield of 44% (w/w). It was concluded that the proposed extraction method using 2-methyltetrahydrofuran and isoamyl alcohol in this work allowed the same efficiency level as chloroform and methanol.

**Keywords :** extraction, green solvent, lipids, sugarcane

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