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

Authors : Sergio S. De Jesus, Aline Santana, Rubens Maciel Filho

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 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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Conference Title : ICBE 2016 : International Conference on Bioengineering

Conference Location : Bali, Indonesia

Conference Dates : October 13-14, 2016