

## **SUNFLOWER OIL EXTRACTION USING PRESSURIZED ETHANOL, ETHYL ACETATE AND METHYL ACETATE**

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The sunflower (*Helianthus annuus L.*) is an oilseed crop with favorable potential inclusion in the chain of biodiesel production. Sunflower poses a high percentage of oil and its use in biodiesel production by noncatalytic supercritical mode, employing reactants as ethanol, and ethyl or methyl acetate has attractive results. Coupling extraction and biodiesel production in the same unit is a technology that can reduce operation costs. Thus the objective of this work is the evaluation of extraction conditions of sunflower oil employing different pressurized solvents. Experiments were conducted in a extraction unit at high pressure at a dynamic mode, with the use of ethanol, methyl acetate and ethyl acetate as solvents. Temperature employed were 20, 40 and 60 °C at a constant pressure of 150 bar and a flow rate of 1mL/min. The extraction of sunflower oil with pressurized solvent was fast. Solvents that showed better performance in the oil extraction were ethyl acetate and methyl acetate. The rate of extraction of oil from sunflower seeds was slower when ethanol was used as solvent in the same conditions of acetates. The effect of temperature on the yield of extracted oil was practically negligible when employed ethyl acetate and methyl acetate. The extraction process in a dynamic mode using ethanol, ethyl acetate and methyl acetate is very attractive to extract vegetable oils in mild process conditions.

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