# Refining of Edible Oil by Ethanol Extraction Combined With Calcium Soap Precipitation for Solvent Recovery

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The present trend in the deacidification of edible oils is using alternative methods, which avoid pollution and ecological problems, use minimum energy and chemicals. Solvent extraction is a promising alternative for deacidification of edible oils, since it can be performed under more mild conditions in comparison to the traditional methods. Several studies have already shown that, this method is feasible when using short-chain alcohols, especially ethanol, as solvent. Even though solvent recovery of extract stream can be easily carried out by evaporation or distillation at low temperatures, this step has the maximum economic impact on the whole deacidification process. Therefore, in this work the deacidification of vegetable oils by the solvent extraction technology, with special attention being given to the recovery of solvent by an alternative solvent recovery method was studied. The suggested method of solvent recovery is based on the precipitation of free faty acids (FFAs) in the alcohol (ethanol) phase as calcium soaps by using Ca(OH)2 as precipitating agent. For this aim, effects of the oil acidity and water content of ethanol on the extraction; effects of precipitation temperature, stirring rate and Ca(OH)2/FFA ratio on the solvent recovery were determined experimentally.

**KEYWORDS**
Solvent extraction
Deacidification
Calcium soaps
Solvent recovery
Edible oil