# Preliminary Testing for Extracting Rubber Seed Oil Using a Screw Press Extractor

Patcharapa Kokor[1], Nanakorn Meehin[1], Supakit Sayasoonthorn[1], Ratiya Thuwapanitchayanan[1], Donludee Jaisut[1] and Kiatkamjon Intani[1]

e-mail: agrspks@ku.ac.th

[1]*Department of Farm Mechanics, Faculty of Agriculture, Kasetsart University, Thailand*

This research aimed to study the optimal conditions for extracting oil from rubber seeds using a screw press extractor. The test samples were RRIT 251 rubber seeds harvested (fallen from the tree) approximately 1-2 week prior from Loei province. The testing involved three types of rubber seeds: unhulled, dehulled, and partially hulled. These were extracted using a screw press extractor at a constant speed of 49 rpm with screw compression distances: 3.0 cm. The results showed that the optimal condition for oil extraction was using partially hulled rubber seeds, yielding the highest average oil extraction of 10.15% and the highest average production rate of 1.92 liters per hour, which was significantly higher than other types. The energy consumption during extraction was 0.21 kWh. The extracted oil contained 16.59% saturated and 83.42% unsaturated fatty acids. The temperature during extraction did not exceed 60°C, which helps preserve essential compounds in the oil. Although the screw press method yields less oil compared to solvent extraction using hexane, it offers advantages in safety, eliminates the use of hazardous chemicals, and better preserves oil quality due to lower heat and absence of chemical residues.

**Research Keyword**: Rubber seed, Rubber seed oil, Screw press, Cold extraction