

## Extraction of Canola Oil Using Supercritical Carbon Dioxide

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In this study, we investigated the effect of the particle size of canola seeds on the extraction rate and yield of canola oil when supercritical carbon dioxide was employed as an extraction solvent. Samples of crushed, dehulled canola seeds were extracted using supercritical carbon dioxide at temperatures ranging from 40°C to 80°C and at pressures between 200 bar and 500 bar for 3 hours. The moisture of the crushed canola seeds were found to be about 6% (w/w). The crushed seeds was sieved into three samples of different particle size ranges. Not only the mechanical reduction in particle size increases the specific area of the oilseeds, but also results in a significant rupture of their cell walls. Both the extraction rate and the total oil yield was found to increase as the particle size decreased. For the samples comprising of seed particles less than 0.6 mm, the extraction rate increased with both pressure and temperature, giving a maximum yield of 48% at 80°C and 500 bar, whereas the extraction yield was observed to be relatively low (2~20%) for the samples having a particle size greater than 0.6 mm.