

**PRODUCTION OF BIO FUEL
FROM SOYBEAN CAKE**

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ABSTRACT

CHARACTERISTICS OF BIO-OIL FROM SOYBEAN CAKE

In this study, soybean cake was obtained from processing of soybean drink at street hawkers. Soybean cake was chosen because their soybean has potential to produce oil for alternative of conventional fuel such as diesel and petrol. Soybean cake was dried under sun and in oven. Pyrolysis of soybean cake sample was investigated under three different temperature. Soybean cake also was characterized by proximate and ultimate analysis by using ASTM method. Generally, the moisture content and volatile matter content is appropriate for pyrolysis application. Meanwhile the carbon content in the soybean cake is high. Besides that, calorific value of soybean cake was measured by bomb calorimeter. The liquid bio oil yield reached a maximum value of 26.20 % with a temperature 600°C. The liquid product, bio-oil was characterized and analyzed by GC/MS. It was show the presence of aromatic ring and substitutions likes benzene, toluene, naphthalene and phenols. FTIR was used to determine structural analysis of pyrolysis oils and it was shown the presence of alcohol and phenol, ketones and aldehydes.