

ABSTRACT

OPTIMALIZATION OF FURFURAL FORMATION FROM OIL PALM EMPTY FRUIT BUNCHES USING ACID HYDROLYSIS METHOD

By

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In this study, formation and identification furfural compound from oil palm empty fruit bunches, that have been obtained from Rawajitu, Lampung Tengah. The step of this study include collecting, sample preparation, acid hydrolysis, purification, and identification. Acid hydrolysis using refluks method, at this stage, the variation of themprature, acid consentration, and hidrolisis time. Identification of compound was performed using UV-Vis spectrophotometry, IR, and Gas Chromatography-Mass Spektroskopy (GC-MS). Acid hydrolysis result obtained conditions for the formation of furfural is at a themperature 90°C, 15% acid concentration, and hydrolysis time 120 minutes, furfural obtained with consentration of 0.368 mg/mL and the persetage yield of 30.357%. IR analysis result appear spectrum at a wavelength of 2850 cm^{-1} and 1731 cm^{-1} which shows the stretching vibration of C-H and C=O aldehyde, wavelength 1517 cm^{-1} which show -C=C- and at wavelength 1225 cm^{-1} which shows -C-O-C- . GC-MS analysis of emerging molecular ion peak at m/e 96 which is the molecular weight of furfural. Data obtained from these have in common when compared with the spectrum of furfural standard, so it can be conclude that the compound obtained is furfural.

Key word : Furfural, acid hydrolysis, oil palm empty fruit bunches (OPEFB)