

Effect of temperature on iodine value and total carbon contain in bio-char produced from soybean stalk in continuous feed reactor

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■ **ABSTRACT** : Study of effect of temperature on iodine value of bio-char and total carbon contain in bio-char was studied in continuous feed reactor with 1 kg/hr feeding rate. The temperature on iodine value of bio-char and total carbon contain as taken at different temperature of 450, 500, 550 and 600°C, respectively in both condition. The yield of the activated carbon in bio-char was decreased 38.1 to 37.54 per cent with the increase in pyrolysis temperature 450 to 550°C. However, the iodine adsorption capacity of the prepared activated carbon increased from 167.7 to 288.78 mg/g with an increase temperature 450 to 600°C in condition 1. In condition 2 the yield of activated carbon was decreased 37.02 to 26.66 per cent with the increase in pyrolysis temperature 500 to 600°C. However, the iodine adsorption capacity of the prepared char decreased 214.67 to 154.158 mg/g with a temperature 450 to 600°C. Based on comprehensive consideration of yield and iodine adsorption capacity of the char prepared, 600 and 500°C was chosen for optimum pyrolysis temperature in condition 1 and condition 2, respectively.

■ **KEY WORDS** : Soybean stalk, Iodine value, Activated carbon, Bio-oil, Pyrolysis, Continuous feed reactor

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