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Complex Fertilizer Production from the Residue in Producing Furfural Using Straw: Study on the

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摘要 The complex additives which contain (ω) 4%~6% phosphoric acid, 4%~6% calcium triple superphosphate, 80%~90% calcium phosphate, 2%~3% calcium carbonate, 2%~4% sodium hydrosuphite, 2%~4% ferric sulfate and 2%~4% aluminum sulfate were used to produce furfural by straw hydrolysis with sulfuric acid. The effect of reaction conditions on residue acidity and furfural productivity were investigated. The experimental results showed that the suitable conditions are sulfuric acid concentration 16% (ω), the added sulfuric acid amounting to 6% of all raw materials, the weight ratio of liquid to solid 2:1, the content of additives in straw 6%, temperature 100~130°C and reaction time of 2 h, under which the productivity of furfural was 9.6% of rice straw and 10.5% of wheat straw respectively(or 80%~85% of the theoretical value), meanwhile the residue became a compound fertilizer.

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