

Isolasi Kapang penghasil asam kojat menggunakan sumber karbon kompleks = Isolation of kojic acid producing mold using complex carbon sources

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Abstrak

ABSTRAK

Asam kojat merupakan senyawa metabolit sekunder yang dihasilkan melalui proses fermentasi oleh kapang genus *Aspergillus* dan *Penicillium*. Tujuan penelitian ini adalah untuk mendapatkan isolat kapang penghasil asam kojat dari alam dan memperoleh kondisi fermentasi terbaiknya dengan menggunakan substrat karbon kompleks. Kapang diisolasi dari tanah dan kayu. Isolat-isolat kapang diseleksi skala mikro dengan variasi medium. Substrat yang digunakan adalah sukrosa, pati jagung, pati singkong, dan hidrolisat selulosa. Kultur fermentasi ditetesi FeCl_3 1, dan warna merah-coklat terpekat Isolat IHJ2K dalam pati jagung-yeast extract dipilih sebagai kapang dan medium unggul untuk proses selanjutnya. Suspensi inokulum IHJ2K dan pembanding *Aspergillus oryzae* diinokulasi ke dalam 100 ml medium fermentasi dan diinkubasi pada suhu ruang, 180 rpm, selama 10 hari. Konsentrasi substrat pati jagung divariasikan menjadi 5, 7,5, dan 10. Kadar asam kojat ditentukan dengan metode KLT densitometri dengan detektor UV pada panjang gelombang 318 nm. Hasil penelitian menunjukkan bahwa kadar asam kojat terbanyak dihasilkan oleh *Aspergillus oryzae* dengan substrat 10, yaitu sebanyak 5,22 g/L. Namun fermentasi paling efisien adalah pada *Aspergillus oryzae* dengan substrat 7,5 dengan yield 0,53 g/g.

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ABSTRACT

Kojic acid is a secondary metabolite compound produced by fermentation process by mold of genus *Aspergillus* and *Penicillium*. The objective of this research is to obtain the isolate of kojic acid producing mold from nature and to obtain the best fermentation condition by using complex carbon substrates. Molds were isolated from soil and wood. Isolates of fungi were screened with media variation. The substrates used were sucrose, corn starch, cassava starch, and cellulose hydrolyzate. The fermentation culture was dripped with FeCl_3 1 and the most brownish red color formed IHJ2K strain in corn starch yeast extract was selected as the best mold and media for further process. The IHJ2K inoculum suspension and *Aspergillus oryzae*, as reference, were inoculated into 100 ml of fermentation media and incubated at room temperature, 180 rpm for 10 days. The concentration of corn starch was varied to 5, 7.5, and 10. Levels of kojic acid were determined by TLC densitometry with UV detector at 318 nm wavelength. The results showed that the highest level of kojic acid was produced by *Aspergillus oryzae* with 10 of substrate, which was 5.22 g L. However, the most efficient fermentation was obtained by *Aspergillus oryzae* with 7.5 of substrate, which yield obtained was 0.53 g g.