



Kojic acid production from agro-industrial byproducts using fungi.

Ismael El-Kady, Abdel Naser A. Zohri, and Shimaa Hamed

Abstract:

A total of 278 different isolates of filamentous fungi were screened using synthetic medium for respective ability to produce kojic acid. Nineteen, six, and five isolates proved to be low, moderate, and high kojic acid producers, respectively. Levels of kojic acid produced were generally increased when shaking cultivation was used rather than those obtained using static cultivation. A trial for the utilization of 15 agro-industrial wastes or by-products for kojic acid production by the five selected higher kojic acid producer isolates was made. The best by-product medium recorded was molasses for kojic acid. *A. flavus* numbers 7 and 24 were able to grow and produce kojic acid on only 12 out of 15 wastes or by-products media. The best medium used for kojic acid production by *A. flavus* number 7 was rice fragments followed by molasses, while the best medium used for kojic acid production by *A. flavus* number 24 was the molasses followed by orange, pea, and rice fragments. An attempt for production of kojic acid using a 1.5 L laboratory fermentor has been made. *Aspergillus flavus* number 7 was used and grown on molasses medium; maximum level (53.5 g/L) of kojic acid was obtained after eight days of incubation.

Keywords:

Kojic acid, Agro-industrial byproducts, fungi

Published In:

Biotechnology Research International , Volume 2014, Article ID 642385 , 1 - 10