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Effects of agitation and volume of inoculum on ferulic acid production by co-culture



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ABSTRACT

Response surface methodology (RSM) has been known as the best tool in evaluating the effects of several variables and their interactions of biochemical and biotechnological processes. The main focus of this research was to study the effects of agitation and volume of inoculum in influencing the ferulic acid production from banana stem waste by co-culture. The optimum conditions for the production process were also determined. RSM with five replicates at the center point was performed to evaluate the contribution of the factors. The p -values of 0.0249 and 0.0268 for agitation and volume of inoculum, respectively, indicate the importance of both factors in ferulic acid yield. Agitation at 150 rpm and volume of inoculum of 5% were found optimum in increasing the ferulic acid yield up to 510.24 mg/kg within 24 h. The results demonstrate that the use of RSM is very helpful to study the effects of interactions among the parameters for efficient production of biological products.