

Optimization of culture conditions by response surface methodology for amylase production by *Arthrobacter sp.*

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Response surface methodology(RSM) is a statistical technique for optimizing complex processes and it reduces the number of experimental trials. Also, it is less laborious and time-consuming than other approaches. In this study, psychrophilic *Arthrobacter agilis* PAMC 27388 strain was initiated to optimize the culture condition for amylase production using response surface methodology(RSM). Physical factors including various inoculum volume (0.318–3.682ml), pH (5.318–8.682) and medium volume (16.364–83.363 ml) were examined to screening for enhanced amylase production. The amylase activity was after flask culture was as low as 1.66 mU/L before optimization. The predicted result based on RSM, the optimum condition for enhanced production amylase were: 2.49 mL inoculum volume, 6.85 pH and 42.87 mL medium volume with a predicted amylase production of 2.84 mU/L. The experimentally obtained amylase activity was 2.50 mU/L, which was a 150% increase compared to the level before optimization.