Studies on Production Conditions of Monacolin K and Pigment from Red Fermented Rice

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ABSTRACT

The monascus spp. could product the intracellular secondary metabolites (ex:red pigment and monacolin K)which advances high commercial value of the monacus fermentation. In the first stage, the objectives of this research were to study different codictions addition water, 4% fructose,0.5% ethanol and 1% peptone during the solid culture. In the second stage, using RSM for discussion optimum additive and concentration during koji making procedure.The derived results were discussed as follows: 1. In the procedure, the different additional results showed that the titratable acidity in the highest approximately 0.09% with adding 4% fructose and the darkness to compare enhance or improved, as for protease activity (0.18 Unit/g), amylase activity (117 glucose μmole/ml), reducing sugar(13.8 mg/ml) and red pigment yield is also to the highest, but the highest approximately 95 mg/kg of monacolin K yield as the with 0.5% ethanol cultures. 2. According to superimposed plots finds optimum produced high amylase activity with approximately is 144.89 μmole/ml during fructose, 0.3% ethanol and 1.2% peptone. The highest of protease activity was approximately 0.28 Unit/g in 2.5% fructose, 0.7% ethanol and 0.9% peptone. The highest red pigment yield (45 mg/ml) which including 4.6% fructose, 0.4% ethanol and 1.4% peptone. The sections of monacolin K, which optimum concentration added 4.0% fructose, 0.7% ethanol and 0.9% peptone and then the ultimate yield could achieve 102 mg/kg. In conclusion, chosen different goal product division into culture, as a result close to the different production of optimum addition before, therefore demonstrated that could use different additional condition for advance there general and value.

Keywords : Monascus spp., monacolin K, red pigment, response surface methodology(RSM)

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