ISOLATION OF PROTEIN AND AMINO RICE BRAN WITH SUB CRITICAL WATER AND METHANOL

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ABSTRACT

Integrated method of isolation of proteins and amino acids with the help of sub-critical water in a biorefinery concept developed in this study. Influence of various operating conditions such as reaction temperature, reaction time, ratio of rice bran: water, rice bran ratio: methanol to water use in the sub-critical stages of protein isolation and amino acid from rice bran. The process of conversion of rice bran into proteins and amino acids produce byproducts such as rice bran defatted underutilized. High protein content in rice bran defatted can be converted into proteins and amino acids. The big difference in the operating conditions for the isolation of proteins and amino acids in the sub-critical water then the combination process is performed to obtain the best results. By using two-route process, carried out by the method of isolation of proteins in situ in water and water-methanol sub-critical. Rice bran, water and water-methanol simultaneously introduced into the reactor with the specified operating conditions. Dissolved in the water phase and solid phase are then separated for analysis. Protein content in products sequentially by 10.69% was obtained with operating conditions: ratio of methanol: H2O = 20: 20 at 200 C for 25 minutes. And amino acids contained in the extract of rice bran is the most big Methionine Methionine percentage is 0.27%. Then Lysine content of 0.17%, and the content of the smallest that can be detected is 0.08% tryptophan.

Keywords: protein, amino acids, rice bran, sub-critical water
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