ISOLATION AND CHARACTERIZATION OF ORYZANOL FROM CRUDE RICE BRAN OIL

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ABSTRACT

The isolation of oryzanol from crude rice bran oil (CRBO) which have extracted with the best solvent, ethanol, was done by a two-step crystallization process. In the first crystallization, oryzanol was concentrated in the liquid phase along with FFA, MG, squalene, tocols, and phytosterols, whereas the solid phase contained mainly TG and steryl esters. Oryzanol-rich product obtained from the first crystallization was subjected to the second crystallization where the oryzanol-rich product was kept at -20 °C for 24 h. N-Hexane was added as anti-solvent to the oryzanol-rich product and kept at 1±5 °C for another 48 h.

In this research, intends to get oryzanol crystal and increase its purity with simple two step of crystallization method. The purpose of this research are to study many factors which can affect to the purity and recovery of oryzanol, and to get oryzanol crystal from rice bran with two step of crystallization.

Ethanol, as a solvent extraction could give the best result with oryzanol purity 1,258%, yield of CRBO 5,89% and low %FFA, 27,47%. Many factors such as the process of Dewaxing and Degumming, the solvent to CRBO and DDRBO ratio on the first crystallization, the storage temperature on the first crystallization, and the effect of storage to oryzanol rich product from first crystallization process could give impact to purity and recovery of oryzanol. So the best result could be reached in 80/1 ratio of DDRBO with first crystallization temperature at -30 °C
after storage, with oryzanol purity in oryzanol rich product (LP1) 2,109% and recovery 82,109%. But unfortunately, oryzanol crystal could not be formed in that temperature of this research.

**Key Word:** Rice Bran; Crude Rice Bran Oil; Dewaxed Degummed RBO; dewaxing and degumming; first and second crystallization; oryzanol rich product