

Tipwadee Jitpisoot 2007: Extraction of Anthocyanin from Black Bean (*Vigna senensis*) And Its Applications in Food Industry. Master of Science (Agro-Industrial Product Development), Major Field: Agro-Industrial Product Development, Department of Product Development. Thesis Advisor: Assistant Professor Withida Chantrapornchai, Ph.D. 181 pages.

A survey of natural colorant usage behavior of store, industrial users, colorant manufacturers, colorant importers and colorant distributors, found that most answerers thought that there is moderate to high possibility in substitution of synthetic colorants by natural colorants in industrial level due to safety concern of most consumers. The majority of food colorant users are interested in buying natural colorant from black bean, if it is produced. From the study of anthocyanin extraction from black bean (*Vigna senensis*) for using as food colorant, found that the optimum extraction condition was black bean to water ratio of 1:4 (w/v), extracted at 60 °c for 50 minutes. Extracted solution was evaporated until 5 °brix. Then, 7.5% maltodextrin D.E. 10 was added before spray drying at inlet air temperature of 135-145 °c and outlet air temperature of 90-100 °c. The colorant powder had brown color, 4.01% moisture content, 8.16% protein, 0.47% lipid, 6.09% ash, 81.3% carbohydrate,  $a_w$  of 0.270, anthocyanin quantity 3.09 mg/ 1 g colorant powder, pH of 6.69, 0.08% acidity, moisture absorbtion 0.52 g, bulk density 0.62 g/ml, solubility was 93.50% and color L\*, C\* and h values were 53.55, 19.96 and 51.20 degree, respectively. Stability test of colorant powder found that anthocyanin content in pigment solution tended to slightly decrease as pH increased from 3.0 to 7.0. At 3.0-4.0, there was sediment and colloid of colorant powder, while at pH 5.0-7.0 there was not. Pigment solution was more stable at pasteurized temperature than at sterilized temperature. Applications of colorant powder in ice-cream showed that users and consumers accepted and were interested in buying them because colorant powder was homogenous with product.

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