

Chatkaew Wiraboot 2007: Development of Instant Cereal Beverage from Broken Jasmine Brown Rice and Adzuki Beans. Master of Science (Agro-Industrial Product Development), Major Field: Agro-Industrial Product Development, Department of Product Development.
Thesis Advisor: Associate Professor Penkwan Chompreeda, Ph.D. 175 pages.

Aim of this study was to add value of broken jasmine brown rice and adzuki bean (*Vigna angularis*). The result from product survey indicated that there were 7 brands of the instant cereal powder product. There were several formulations such as regular, high dietary fiber, brown rice and soy protein. Moreover, there were varieties in flavor such as cocoa, green tea, vanilla and natural. The product was packed in aluminium laminate sachet with net weight of 27-30 g. The price ranged from 3.5-7.5 baths per sachet. Consumer survey using Quality function deployment (QFD) technique showed that overall nutritional quality, dietary fiber, calcium and fat were the important factors for consumer. Furthermore, QFD also indicated total energy, the amount of protein, fat, dietary fiber, sugar, vitamins calcium and price were main factors for product development. In this study, jasmine brown rice powder was prepared by drum drying of predigested brown rice mixture with enzyme α -amylase(BAN 480L) at 120⁰C . Adzuki bean powder was also prepared by drum drying at 110⁰C. The optimum formulation of instant beverage from brown rice and adzuki bean obtained from linear programming consisted of crisp mixed cereal 23.66%, caster sugar 11.83 %, skim milk powder 25.63%, adzuki bean powder 13.64%, brown rice powder 13.64%, inulin 6.25%, non dairy creamer 3.94%, vanilla powder 1.41% and sucralose 0.0062%. Product contained fine particle of brown rice and adzuki bean powder. Water activity of the product was 0.261. The instant beverage from brown rice and adzuki bean (30g) contained energy of 102 Kcal, protein 5.12g, dietary fiber 2.75 g, carbohydrate 19.13g and calcium 161.54 mg. It also contained vitamin A 52%, B1 37%, B2 39% and E 36% of Thai RDI. Consumer acceptability test showed that they liked beverage prepared from instant beverage from brown rice and adzuki bean moderately like (7.3 of 9 scores). Almost all respondents (99%) accepted the product. After providing nutritional data of the product, McNemar test showed that significantly (P<0.05) increased in purchase intense of the product at higher price than commercial one.

Student's signature

Thesis Advisor's signature

