

Duangjongkon Sutinium 2007: Development of Instant Nutritious Beverage from Germinated Jasmine Brown Rice for Aged Consumer. Master of Science (Agro-Industrial Product Development), Major Field: Agro-Industrial Product Development, Department of Product Development. Thesis Advisor: Associate Professor Vichai Haruthaithanasan, M.S. 179 pages.

Germinated brown rice (GBR) is a very popular product in Japan. Kayahara and Tukahara (2000) reported that continuous intake of GBR could accelerate metabolism of brain, relieve constipation, lowering blood pressure, and prevent cancer of colon, heart disease, and Alzheimer's disease. In present, the number of aged consumer (>60 years old) has increasing resulted from better health care system as well as more commercial healthy and anti-aging products available. Therefore, aim of this study was to value added to brown rice and utilize as raw material in healthy beverage product for aged consumer. Germinated jasmine brown rice (GJBR) flour was prepared by steaming GJBR, removing husk, cooking, drying and grinding. GJBR flour (150 mesh) contained protein 9.03 g./100 g., dietary fiber content of 3.52 g./100 g. and GABA content 7.62 mg./100g. Result from product survey indicated that there were many types of malt and cereal instant beverage in existing market and prices ranged from 4 to 8 baht/ sachet (30–35 g). Attributes which aged consumer used to select the instant cereal beverage in market were nutrition, good taste and convenience to consume. The instant healthy beverage from germinated jasmine brown rice for aged consumer should contain calcium, dietary fiber, low fat and no cholesterol. Individual pack should contain 35 g./sachet and price should equal or less than the commercial product. The optimum formulation of the instant healthy beverage from germinated jasmine brown rice for aged consumer obtained from linear programming consisted of GJBR flour 20%, caster sugar 20%, skim milk powder 44.6%, vanilla powder 5.1% and inulin 10%. Functional ingredients added in instant nutritious beverage were vitamin B6, vitamin B12, folic acid and L-Carnitine. One serving size (35g) composed of energy 120 Kcal, protein 5.64 g, dietary fiber 3.72 g, carbohydrate 24 g, fat 0.18 g, vitamin B6 1 mg, vitamin B12 0.82 µg, folic acid 59.3 µg and calcium 203 mg. The water activity of the product was 0.28 and was microbiologically safe. Acceptance test by 50 aged consumers indicated that all of them (100%) accepted. 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.

Duangjongkon Sutinium

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