Praweena Lapa 2011: Development of Fermented Vinegar from Black Glutinous Brown Rice. 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. 102 pages.

Developing new healthy fermented vinegar from black glutinous brown rice (BGBR) was the objective of this research in order to add value of BGBR. BGBR was composed of carbohydrate 79.22% and cyanidin-3-glucoside 50.62 mg/100g. There are three steps of making fermented vinegar. The first step was about BGBR saccharification from steamed rice which was soaked in water as ratio 1:1.25 for 4 hrs. Then it was mixed with 0.4% koji of *Amylomyces rouxii* TISTR 3182 and fermented to obtain glucose of 39.6% for 3 days. Secondly, BGBR wine was made from the mixture of saccharified BGBR liquid and coconut water which was fermented by *Saccharomyces cerevisiae* TISTR 5049 to obtain alcohol of 11.5% for 8 days. Lastly, vinegar was from BGBR wine which was adjusted to alcohol 5%, pH 5.5 and fermented by using *Acetobacter aceti* TISTR 354 and shaking method for 3 days. The BGBR vinegar was clear, light orange color and contained acetic acid 5.48% with pH 3.38 and cyanidin-3-glucoside 5.01 mg/100ml. The vinegar combined product from the market survey were salad dressing, mayonnaise, spread, chilli sauce, dipping sauce, seasoning sauce and beverage. The application of BGBR vinegar was used in dressing for 34%. The BGBR vinegar combined dressing was clear, light orange color and contained acetic acid 1.59% with consumer's overall liking score 6.78.

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