

## ABSTRACT

**Research title:**        The formula of broken-milled rice                        berry ice  
cream for value adding purpose

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### **Abstract**

The research on finding a formula of broken-milled rice berry ice cream for value adding purpose aimed at adding value to the broken-milled rice berry which was not much utilized in the past to be value added. The agricultural union group, Kaset tagorn Ruamjai, in Tambol Cheoung klad, Umphur Bang Rajan of Singburi Province, once produced this ice cream. However, it was not popular because of its rough texture and its astringent and bitter taste. The researcher was interested in doing the study on the development of a better-accepted formula of the rice berry ice cream by modifying the formula which had been used in making Karanda (*Carissa carandas* L.) Fruit, ice cream. Consequently, the rice berry ice cream became better accepted by the consumers, and can now increases its sales.

The broken-milled rice berry used in this research was chosen from the organic-cultivated rice berry produced by the Kasettagorn Ruamjai agricultural union group in Umphur Bangrajan. The sample group in this research were the 100 tasters who had basic knowledge of food: the students in home economics, in food industry and food services, and in food science from Suan Sunandha Rajabhat University.

Two tasting tests were done by the same people from the sample group tasting rice berry ice cream applying all three formulas in each of which different kinds of broken-milled rice berry were prepared in three methods. As a result, the third formula was best accepted. Subsequently, it was developed into the

fourth formula. Then it was tasted by the same people from the sample group. Finally, it was brought into the tests again for acceptance which was evaluated by teachers, officials, general students who were not those 100 tasters from the sample group.

The study found that the astringent and bitter taste in the ice cream occurred during the process of the broken-milled rice berry when finely pounded and the boiled rice berry being finely blended. The tannin structure decreased in size. In addition, the ice cream produced with all formulas had the mixture of soya milk, powdered milk and starch in the broken-milled rice berry all of which had acid property that can digest hydrolysable tannin causing astringent and bitter taste in ice cream. The researcher filled in some vegetable oil to extract tannin and at the same time filled in some fresh coconut juice so that protein can get hold of tannin causing sedimentation. As a result, the bitter taste decreased. In the development of rice berry ice cream there were experiments on all three formulas. The research result showed that the third formula got the highest total score of preference which was 75% of the whole score. However, it was commented that the ice cream was still a little bitter and also a little too sweet. Therefore, the researcher developed the fourth formula of rice berry ice cream in order to solve the stated problems by reducing the mixture of sugar, filling in vegetable oil and the fresh coconut juice into that mixture. After being tasted, the fourth formula got the total score of preference at 81% which was higher than the score that the third formula had got. The reasons were that rice berry ice cream of the fourth formula had softer texture, better scent of rice and coconut juice, and appropriate sweetness. Moreover, it got the score of acceptance at 83.25%, the score of satisfaction of 4.16 which showed high satisfaction.

The researcher included that the development of rice berry ice cream of the fourth formula had the best result and the best acceptance of all following aspects: texture, scent, color, and taste.

### **Suggestions**

1. 10-20 % of the fresh coconut juice should be added in the formula to dispel the bitter taste of the rice berry ice cream; moreover, the scent and taste of fresh coconut juice can make people who have that ice cream more refreshed.

2. Newly harvested broken-milled rice berry should be used because that ice cream will give better scent of rice and also sweeter taste than that using the longer- kept rice.

3. The broken-milled rice berry should be developed into other forms such as waffle, Cho muang dessert, fresh Piak poon dessert, Kao grieb pak mor, or etc.