

Evaluation of Acceptability of Cashew Apple Jam in Cambodia

AG 16 S. Sokly, Y. Muramatsu, D. Oka, Y. Tanikoka, M. Uchino, S. Muramatsu, M. Sekido, T. Nakamura, T. Nakajima, E. Sakaguchi, S. Kawakami, C. Chim, M. Arimitsu, and M. Mihara

ABSTRACT : The aim of this study is an investigation of the acceptability of a cashew apple jam based on a sensory evaluation test in Cambodia. The sensory evaluation test for the two types of cashew apple jam: hot-pack and reheated jams was conducted in Phnom Penh, Cambodia in September 2019 for a total of 70 persons. The color, sweetness, acidity, taste, flavor, jelly state, smoothness, and overall of each sample were evaluated by using a five-point hedonic scale (1: hate, 2: not like much, 3: usual, 4: like, and 5: like so much) at the sensory test. Because the scores of both jams given by panelists were ranged from 3 to 4, it denoted that the cashew apple jam was acceptable and had a possibility to become new processed food in Cambodia.

INTRODUCTION

In Cambodia, a cashew plant is one of an industrial crop and it is commercialized only cashew nuts. The rest of cashew fruit: cashew apples are not utilized and became a waste. New processed food made from local sites is expected to the increase of income for the farmer and also support independence of them.

METHODOLOGY

Composition

- Cashew apple :400g
- Citric acid :2.4g *2
- Sugar :300g *1
- Sugar content :Bx.50°
- LM Pectin :3.4g *3

*1 Sugar is separated in three equal portions (100 g).

*2 Citric acid is dissolved with water.

*3 Pectin is mixed with 100 g of sugars beforehand.

Product process

Water 100g
Sugar① 100g
LM Pectin



Pectin and a sugar are dissolved in boiled hot water.

Heat dissolution

← Cashew apple



Boiling (about 3-5 min.)

← Sugar② 100g (after boiling)

Add sugar 3 times and boil until Brix 50°

When pectin is dissolved, add ingredients.



Boiling (about 3-5 min.)

← Sugar③ 100g (after boiling)

Boil until Bx. 50°

After stopping heating, add the dissolved citric acid.

← Citric acid (Dissolved in water)

Filling (Fill while hot)



Sterilization (90°C, 20min.)

Fill bottle while hot.

Sterilization failure occurs at temperatures < 80°C.

Cooling (Room temperature)



Fill up to 3-5 mm from above (↑↓).

After closing the lid, turn the bottle upside down.

Finished product

OBJECTIVES

- ✓ To survey a sensory test of cashew apple jam in Cambodia
- ✓ To evaluate the acceptability of cashew apple jam based on the sensory evaluation test in Cambodia

RESULTS AND DISCUSSION

The sensory characteristics of each sample were evaluated using a five-point hedonic at the sensory test in Tokyo University of Agriculture (TUA), Japan; Royal University of Agriculture (RUA) and supermarket, Cambodia. There was a significant difference (5% significance level) in the color, sweetness, taste, flavor, jelly state, smoothness, and overall evaluation between the hot-pack jam and the reheated jam for the RUA's and TUA's panelists (Fig. 1).

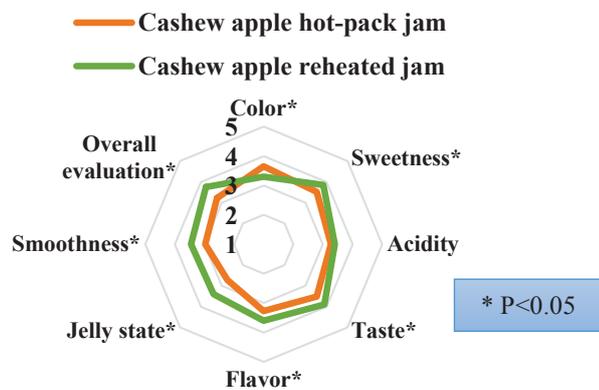


Fig. 1 Sensory evaluation of the hot-pack and reheated jams for the RUA's and TUA's panelists

30 citizens evaluated only reheated jam at the supermarket in Phnom Penh. A significant difference was recognized in the color and smoothness between the RUA's and TUA's panelists and the citizen's panelists (Fig. 2).

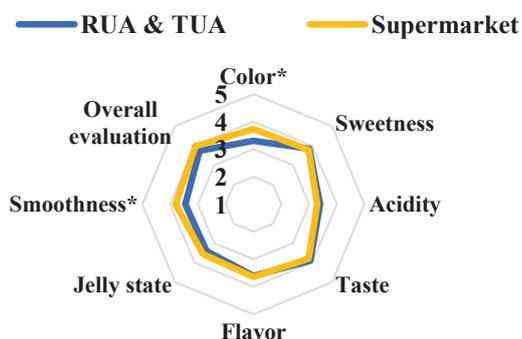


Fig. 2 Sensory evaluation of the reheated jam for RUA's & TUA's panelists and 30 citizen at the supermarket

The scores of overall evaluation for both jams given by panelists ranged from 3 to 4 hedonic points (usual to like).

CONCLUSION

Panelist preferred the sweetness of the reheated jam. In the overall evaluation, the scores of both jams given by panelists ranged from 3 to 4 hedonic points (usual to like). The cashew apple jams were acceptable and had the possibility to become new processed food in Cambodia. The potential of cashew apple in jam making, product development, reduce post-harvest losses, create job opportunities and contribute to Cambodia's development.