



 **9th INDES 2020**
LIMITLESS MIND:
EMPOWERING INNOVATION THROUGH VISUALIZATION



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The 9th International Innovation, Invention
& Design Competition
INDES2020

17th May – 10th October 2020

MEESIPUT CRUNCHIES

Raudhatul Jannah Binti Ridzuan, Nurul Azmina Binti Zulkifli, Madihah Binti Mohd Noor and
Noristisarah Abd Shattar

*Faculty of Hotel & Tourism Management, Universiti Teknologi MARA Cawangan Terengganu Kampus
Dungun, MALAYSIA*

E-mail: jannah0921@gmail.com

ABSTRACT

MeeSiput Crunchies is an innovation of snacks food develop from original *mee siput* which is popular in Muar, Johor. This product aims to introduce free gluten snack food for people with celiac disease or a person who has an allergy towards gluten. This snack has been made of all-purpose gluten free flour that is mixed with xanthan gum, eggs, salt and warm water. Then, the dough was pressed into the noodle machine and the noodle were boiled until cooked. Next, formed the cooked noodle into small nest-shaped and sun-dried for three days. *MeeSiput* Crunchies is packed into bagged snacks and come together with special chili powder which can be shake and consume directly or mix it with water as a dipping sauce. The hedonic test with attributes of appearance, texture, aroma, crunchiness and overall acceptance had been conducted towards 31 panelists. Three (3) variances of *MeeSiput* Crunchies with different flour were served to the panelists; wheat flour (A), corn flour (B) and all-purpose free gluten flour (C). As the final result, sample C is the most acceptable with the higher score of texture, crunchiness and overall acceptance. Therefore, it has a good commercial value as it is suitable for all ages especially for people with gluten allergy.

Keywords: *meesiput*, free gluten snack, gluten free flour, sensory evaluation

1. INTRODUCTION

MeeSiput is a traditional snack in Muar, Johor. The main ingredient of *MeeSiput* is made from wheat flour and it serves with sambal sauce. *MeeSiput* also known as snack food and being local food in Muar, Johor [4]. The innovation of this snacks is developed to make it more convenient as it is easy to asses by consumer. All-purpose gluten-free flour is typically used to treat a genetically defined chronic inflammatory intestinal condition (celiac disease) caused in wheat gluten, barley or rye etc. gluten-free flour. Celiac disorder affects about 1% of people around the world and the only cure available is a strict gluten-free diet (GFD) for life [3]. Xanthan gum is a food additive and it is used as binding agent for the flour. Since this ingredient used in making *MeeSiput* Crunchies, it will provide elasticity and stickiness for the dough because there is no gluten present in all-purpose free gluten flour. This will help the dough to hold onto some moisture and helps give some structure. The preservation of food by drying is based on the principle of reduced water availability for the microorganisms and nutrients that present in food. In this process, the humidity content has been decreased to the degree that the development of food spoilage and micro-organisms that poison food is inhibited, thus improving the lifetime of food products [6]. In Malaysia, there were less free gluten snack food that available. Meanwhile, in US, free gluten snack is increasing from year to year up to 2025. This is because people aware about gluten free diet [2]. Therefore, *MeeSiput* Crunchies can encourage people who is experiencing celiac disease to consume this product safely.

2. MATERIALS AND METHODS

Materials of *MeeSiput* Crunchies were obtained from retail store. The percentage of the ingredients used in making *MeeSiput* Crunchies were all-purpose gluten free flour (61%), dried chilli (20%), eggs (9%), sugar (4.5%), warm water (3%), salts (1%), oil (0.35%) and xantum gum (0.15%).

2.1. Method

All the ingredients (all-purpose gluten free flour, xanthan gum, eggs, salts and warm water) were prepared and weighed then mixed up together to make a dough. The dough was pressed into the noodle machine and boiled at 100 °C in 3 minutes. Then, rinsed with cold water, formed into a small nest-shaped and sun-dried for 3 days. Lastly, the dried *meesiput* were fried before packing process. For *sambal*, dried chilies were boiled and blend it into paste. After that, fried, dry the paste in air fryer (180 °C in 5 minutes) and in oven (125 °C in 3 minutes) and lastly blend it into powdered form. The *MeeSiput* Crunchies were packed into 100 g net weight bagged snacks. The special sambal powder was put in a small dipping container. Then sambal powder was put into the packaging with *mee siput*. *MeeSiput* Crunchies' sensory properties had been evaluated with the hedonic test to measured the level of customer acceptance and product satisfaction. There were 31 untrained panelists for tasting which sample had a greater attributes of appearance, texture, aroma, crunchiness and overall acceptance. Each panel was given three samples; sample A (wheat flour), sample B (corn flour) and sample C (all-purpose free gluten flour. A hedonic 5 point scale was used anchored with “extremely dislike” and “extremely like”. The average mean score along showing which sample is most preferable using Microsoft Excel.

3. RESULTS AND DISCUSSION

3.1. Sensory Test Result

The mean score of each test was used to compare the difference between formulations. Table 1 presents the results of the sensory evaluations.

Table 1. Preliminary sensory result			
Attribute	Sample A	Sample B	Sample C
Appearance	3.74	3.32	3.94
Texture	3.65	3.26	4.10
Aroma	3.45	3.52	3.65
Crunchiness	3.74	3.71	4.06
Overall Acceptance	3.45	3.68	4.26

The variation shows that Sample C was the highest score mean in all the attributes; appearance, texture, aroma, crunchiness and overall acceptance. This can be shown *meesiput* that produced by all-purpose free gluten flour could contribute better taste, texture and appearance by aiding xanthan gum which used to improve the physical properties of the dough [7]. In addition, this innovated product used to aim celiac disease patients can consume this product safely, moreover, an inflammation and poor nutrient absorption may contribute to difficulties to other organs and other system of the body in affected individuals [1]. Thus, result showed low differences among these samples in terms of crunchiness due to loss of moisture

during drying process. Due to the absence of gluten, all-purpose free gluten flour has less cohesive and extensive texture and it became the trend as it brings the health beneficial effect [5].

4. CONCLUSION

In conclusion, *MeeSiput* Crunchies is the best choice as it is made by natural and organic ingredients. Thus, it also convenience and cultural preserves as the taste of *MeeSiput* stay remain. Kids, adults even old folks can consume it safely. Besides, this *MeeSiput* Crunchies very suitable for those who prefer to have a free gluten diet as their snacks. *MeeSiput* Crunchies also improvise based on packaging to ensure that it is easier to grab and eat.

5. ACKNOWLEDGEMENT

It was a self-funded project by all researchers and highly appreciation to Faculty Hotel and Tourism Management Cawangan Terengganu Kampus Dungun that helps a lot in conjunction to finishing the product. The achievement was gratitude also to all the researchers for the commitment and teamwork throughout the years.

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