

TABAGAK IN MANGO SAUCE: READY TO EAT EMERGENCY FOOD

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ABSTRACT Food assistance during calamities, war and food shortage play a vital role in helping those in need. This study aims to develop water retort tabagak in mango sauce and to determine its general acceptability. Tabagak in Mango Sauce Composition per bottle with total weight of 250 g composed of 6 pieces pre-cooked tabagak, 70 g Mango Sauce composed of canola oil, mango concentrate, salt, laurel leaf and pepper corn. The hedonic rating scales are used to quantify affective dimension of the consumer perception of tabagak in mango sauce. The confirmatory test result indicated that Tabagak in Mango Sauce processed at 120 OC for 60 min had better quality since it had shorter cook value that affect highly influenced the physical quality parameters like appearance, aroma, taste, mouth feel and texture.

Keywords: tabagak, mango sauce, experimental

INTRODUCTION

Background of the Study

At present, emergency food stockpiled by local governments and households is low in absolute quantities and little of this food can be eaten without water or heat, which may be unavailable immediately after natural calamities like earthquake and typhoon. Furthermore, there are few cases of large, diverse stockpiles prepared with long-term emergency living conditions for survivors in mind, and much emergency food goes unused, as it is disposed of after its shelf life expires. It is important that we change the mind from conventional "Emergency food" that stockpilers assume will not be used, to "Disaster preparation food" (food prepared for disaster) that can be used in usual days as well as prove especially useful during a disaster.

Food assistance during calamities, war and food shortage play a vital role in helping those in need. Nothing is more important than providing food when people find themselves suddenly, and often critically, in need following a storm, earthquake, flood or other disaster emergency. Food aid has been invaluable in providing basic nutritional needs to shock-affected people, saving untold millions of lives over the past half century or more (Barrett and Maxwell, 2005). The most vulnerable members of shock-affected populations – children and women, in particular – typically suffer disproportionately from food consumption shortfalls during episodes of transitory food insecurity, and often suffer even when other members of the household are able to cushion themselves against shocks (Hoddinott, 2006). Food aid can be particularly effective in meeting the needs of these vulnerable groups. Equally important, timely delivery of food to severely food-insecure people relieves pressure to clear up scarce productive assets, enabling recipients to resume progress towards a fully secure livelihood as soon as the shock passes. Food aid is important in meeting the right to food and in protecting productive assets, especially the human capital that is the principal wealth of the poor.

Sardinella albella (Tabagak), body somewhat compressed but variable, from slender to moderately deep; total number of scutes 29 to 33. Vertical striae on scales not meeting at center, hind part of scales with a few perforations and somewhat produced posteriorly. A dark spot at dorsal fin origin. Lower gill rakers 41 to 68 (at 4 to 15 cm standard length, increasing a little with size of fish). Usually found in coastal waters. Forms schools. Feeds on zooplankton and phytoplankton. Distributed in Indo-West Pacific from Red Sea, Persian Gulf, East African coasts, Madagascar eastward to Indonesia and the Arafura Sea; north to Taiwan and south to Papua New Guinea. It found in western and southern Taiwanese waters, Penghu and in the Philippines. Marketed fresh, dried, dried-salted, and made into fish balls.

The water retort is an equipment or vessel (or sterilization through the application of heat) of food products packed in retort pouches (like suman, bibingka, fruit puree, rice, milk and chocolate flavored porridge). Provide an opportunity for food processor to shift to retort pouch as alternative packaging for thermally processed products at lower cost.

Objective of the Study

This study was conducted to develop water retort tabagak in mango sauce a ready to eat emergency food and to determine the general acceptability of water retort tabagak in mango sauce.

METHODOLOGY

The following are the raw materials , supplies, tools and materials needed in making Tabagak in Mango Sauce.

Product	Raw Materials	Supplies	Tools and Equipment
Tabagak in Mango Sauce	Tabagak (Sardinella albella) Salt Water Mango Sauce Corn Oil	Face mask Paper Towel Laboratory Gown Hairnet Hand gloves or potholder.	Cups, Measuring spoons, Knife, Spatula, Chopping Board, Plastic bowl or basin, strainer, Scissor, water retort pouch

Experimental Design and Sample Treatments

The Completely Randomized Design (CRD) one where the treatments are assigned completely at random so that each experimental unit has the same chance of receiving any one treatment. For the CRD, any difference among experimental units receiving the same treatment is considered as experimental error. CRD was used in this study with the following sample treatments:

	Time	Temperature
Preliminary Test	70 min	120°C
Confirmatory Test	60 min	120°C

Preparation of materials and Equipment

The procedures start with the preparation of the raw materials and equipment.

Fish Preparation

Procedure:

1. Removal of the head, tails, fins, and internal organs of each fish, followed by washing or cleaning the remaining fish.
2. Freezing the fish overnight.
3. Pre-cooked the fish in oil until slightly golden.

Water Retort Process

1. Arrange the fish in a glass bottle. Put 6 pcs of fish per bottle.
2. In every bottle, pour the mixture of oil, water, and mango sauce up to the rim of the bottle.
3. Sealed and place the bottle inside the water retort equipment. Cook according to procedure.

Preparing the Finished Product

Bottle was labeled according to the design after it was dried.

Recording, Analysis and Interpretation of Data Gathered

The water retort Tabagak in Mango Sauce were analyzed for data on sensory evaluation as to the aroma, taste (acceptability or patability), appearance, color, texture and general acceptability Hedonics Scale for sensory evaluation.

All the products produced undergo the following process:



RESULT AND DISCUSSION

Conditions of preparing Tabagak in Mango Sauce were shown in the procedural design section below. Tabagak was purchased from fish vendor upon arrival of fishing boat to insure the freshness of the tabagak fish. Plastic containers were used to hold the fish added with ice. Fish was then clean and freeze overnight.

During the preliminary test 5 kilogram of clean fish was pulled out from the freezer the fish was pre-cooked in oil until slightly golden. The fish were arrange the in a bottle due to unavailability of water retort pouch. About 6 pcs of fish per bottle pour with the mixture of canola oil, mango sauce up to the brim of the bottle weighing 389.5 grams (as shown in table 1. The bottles were sealed placed inside the water retort equipment. Cook at 120 0C for 70 min. Results showed a brownish color fish.

For the confirmatory test, 5 kilograms of clean tabagak fish were pre-cooked in oil until slightly golden. Fish was filled into glass bottle with the mixture of canola oil, mango sauce. The water retort was set to cook at 120 0C for 60 min. Results showed a light brownish color fish.

Illustration of Process of Tabagak in Mango Sauce



Table 1. Tabagak in Mango Sauce Composition

Test	Sample	Composition per bottle (250.0 grams)	Temperature	Cooking Time	Observation
Pre-liminary	30 bottles	6 pcs pre- cooked tabagak Mango Sauce composed of canola oil, mango concentrate	120°C	70 min	brownish color fish
Confir-matory	30 bottles	6 pcs pre- cooked tabagak Mango sauce composed of canola oil, mango concentrate, salt & pepper corn	120°C	60 min	light brownish color

Table 2 depicts the top five terms used to express the sensory qualities identified by the researchers as being most prevailing for Tabagak in Mango Sauce . The hedonic rating scales are used to quantify affective dimension of the consumer perception of foods (Tuorila, 2008). Among the hedonic rating scales, the 9-point degree of liking scale, also called the 9-point hedonic scale, is probably the most commonly used (Tuorila, 2008) (Lawless and Heymann, 2010). In the test consumers are asked to give their hedonic opinion to a product sample by choosing and marking one of nine alternatives, (ranging from 9 = like extremely to 1 = dislike extremely). Within the duration of hours after cooking during the preliminary test sensory evaluation were conducted to 25 consumers. Tabagak in Mango Sauce were perceived to have an appearance with a mean value of 7.32 =in between "Like Very Much" and "Like Moderately". The aroma of Tabagak in Mango Sauce was perceived with mean value 6.96= in between "Like Moderately" and "Like Slightly". The taste of Tabagak in Mango Sauce was perceived with a mean value 7.28= in between "Like Very Much" and "Like Moderately". Mouth feel was perceived as 7.08 = with in "Like Very Much" and "Like Moderately". Texture of Tabagak in Mango Sauce was perceived as 6.92= in between "Like Moderately" and "Like Slightly". The present study indicated that Tabagak in Mango Sauce at 120 OC for 70min had better quality since it was perceived with a mean value of 7.24 = in between "Like Very Much" and "Like Moderately".

For confirmatory test Tabagak in Mango Sauce sensory evaluation were conducted to 25 consumers. Result shows that Tabagak in Mango Sauce was perceived to have an appearance with a mean value of 7.96=in between "Like Very Much" and "Like Moderately". The aroma of Tabagak in Mango Sauce was perceived with mean value 7.92= in between "Like Very Much" and "Like Moderately". The taste of Tabagak in Mango Sauce was perceived with a mean value 8.04= in between "9-Like Extremely" and "Like Very Much". Mouth feel was perceived as 8.04= in between "9-Like Extremely" and "Like Very Much". Texture of Tabagak in Mango Sauce was perceived as 8.04= in between "9-Like Extremely" and "Like Very Much". The present study indicated that Tabagak in Mango Sauce at 120 OC for 60 min had better quality since it was perceived with a mean value 8.04= in between "9-Like Extremely" and "Like Very Much".

Table 2. Sensory Score of Tabagak in Mango Sauce at 120 OC cooked with different time

Cooking time	Appearance	Aroma	Taste	Mouth Feel	Texture	Overall Acceptability
70 min	7.32	6.96	7.28	7.08	6.92	7.24
60 min	7.96	7.92	8.04	8.04	8.04	8.04

Scale: 9-Like Extremely, 8-Like Very Much , 7-Like Moderately, 6-Like Slightly, 5-Neither Like nor Dislike, 4-Dislike Slightly, 3-Dislike Moderately, 2-Dislike Very Much, 1-Dislike Extremely

CONCLUSION

Tabagak in Mango Sauce Composition per bottle with total weight of 250 g composed of 6 pieces pre-cooked tabagak, 70 g Mango Sauce composed of canola oil, mango concentrate, salt, laurel leaf and pepper corn. The confirmatory test result indicated that Tabagak in Mango Sauce processed at 120 OC for 60 min had better quality since it had shorter cook value that affect highly influenced the physical quality parameters like appearance, aroma, taste, mouth feel and texture.

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