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Value Added Products from Crab

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Abstract

Some of the consumers find crab shell as a hindrance in consuming crab. Hence despite its taste, tends to keep away from it. The objective of the present study was to produce easy-to-eat value added products from crab. Murukku, a traditional savory product popular in southern India.was identified for this purpose, as they are low in protein and mineral contents. The main ingredient for all types "murukku" is rice flour. Prepared three value added products namely, product A, product B and product C. Product A was prepared using only crab meat and product B was prepared using crab meat, fish meat and egg and product C was prepared using crab meat and fish meat. The Panel members were selected from the faculty and students of M.E.S Asmabi College, Kodungallur, Thrissur District. Separate booths were set up for evaluating the products. Mineral water was kept besides each booth. The panel members were instructed to rinse their mouth and have a sip of water after finishing each product's sensory evaluation. Score card mentioning the hedonic scale was provided to each panel member. Each product's economic acceptability and sensory score was recorded by the panelist. Quality of the products were analysed by statistical method in Microsoft excel. Economic acceptability was analysed based on the panelist's reaction in the score sheet after using the product. Crab murukk with ingredients in product A with rate Rs 40 per kilogram was recommend by panelists.

Key words: Crab Meat, Sensory Analysis, Value Added Products, *Sylla Serrata*

Introduction

The seafood processing and marketing has become competitive all over the world and exporters are switching to value addition to increase profit. Value-addition is the most talked word in the seafood processing industry because of the possibility of better realization of foreign exchange earnings and high unit value. The processing of value added products require improved harvest and post-harvest technology. Emerging economies and industrialization in many former third world countries, as well as new second and first world countries are driving the demand for not only value added products, but protein alternatives. Poultry is the largest protein currently being consumed globally and it is obvious that demand will not be sufficient to feed the growing masses.

Countries, such as China and India, are driving the protein commodities on a massive scale. As these countries continue to develop a growing middle class and appetite for quality and luxury goods, the demand for

value added products will continue to sour. Furthermore, fish and fishery products recorded the highest increase in price both in the domestic and export markets in recent years compare to any other items. However, the growth and development of fishery sector is currently almost entirely depending on the export market performance.

Globalization has further intensified competition among countries to capture this lucrative market. Product differentiation coupled with stringent quality controls and promotion of diversified value-added products might immensely help us to face this severe competition and retain our position. Thus, the trend is away from commodity products, such as the traditional frozen blocks, and in to value added products. Everybody wants value added products and they are being more specific. As a result, companies should try to do as much processing at the source to fit these custom orders. Our current study is to make value added products from crab. Crab meat is considered as a delicacy in many parts of the world and within the country it is an important source of protein rich food for the less affluent society of coastal areas. Besides its immense nutritive value crab meat also carries many therapeutic properties.

'Murukku' is a savoury, crunchy snack originating from the Indian subcontinent, popular in southern India, and Sri Lanka. The snack's name derives from the Tamil word for "twisted", which refers to its shape. In India, Murukku is especially popular in the states of Tamil Nadu, Kerala, and Andhra Pradesh. It is also popular in countries with substantial presence of Indian and Sri Lankan diaspora, including Singapore, Fiji,
and Malaysia.Murukku is typically made from rice flour and urad dal flour. It is sometimes called "chakli"; chakli is a similar dish, typically made with an additional ingredient, bengal gram (chickpea) flour. Thus, crab murukk will be a product with rich nutrients and medicines. Our main two objectives are to prepare value added products from crab and to identify the best contribution of inputs by sensory evaluation.

Materials And Methods

Raw material

Procured the crab (*Sylla serrata*) from local vendors. Brought it to the lab within 2hrs in fully iced condition. Cleaned the crabs. Cooked it and extracted the crab meat.

Prepared three value added products namely, product A, product B and product C. Product A was prepared using only crab meat and product B was prepared using crab meat, fish meat and egg and product C was prepared using crab meat and fish meat. Ingredients needed for the three products are given in the table.

SL NO:	INGREDIENTS	QUANTITY (%)
1	Crab Meat	20%
2	Rice Flour	50%
3	Urad dhal	25%

4	Azefoatida	0.02%
5	Sesame seeds	4%
6	Salt	0.098%

Table.1 . Ingredients of Product A

INGREDIENTS	QUANTITY (%)
Fish meat	8%
Crab meat	10%
Egg	2%
Rice Flour	50%
Urad dhal	25%
Azefoatida	0.02%
Sesame seeds	4%
Salt	0.098%

Table 2. Ingredients of Product B

INGREDIENTS	QUANTITY (%)
Crab meat	10%
Fish meat	10%
Rice Flour	50%
Urad dhal	25%
Azefoatida	0.02%
Sesame seeds	4%
Salt	0.098%

Table. 3. Ingredients of Product C

Kerala crab (Decapoda, Brachyura), crustacean species harvested from fresh water culture ponds and transported for processing in to the laboratory. The crab was washed with chilled water and dressed to remove shell and legs. Meat was separated from dressed fish using knife. The deboned crab was later minced using a mixer to obtain uniform size meat particles. The fresh minced meat obtained from crab was used for the preparation of crab murukk. Cuttlefish,"kanava", was used for fish meat (for products B and C). They are marine mulluscs of order sepida. The fish which is harvested from sea. They are washed and deboned then minced to obtain uniform particles. Hen egg also used to make product B.

Preparation of products

All ingredients shown in the table 1, 2 and 3 were mixed thoroughly with 200 gms of water and made into a thick paste. This batter was converted into desirable shape using appropriate sieves. It was air dried for one hour and deep fried in coconut oil.

Plate 1. Value added products developed from crab meat

Sensory evaluation

Prepared products were kept for sensory evaluation. The Panel members were selected from the faculty and students of M.E.S Asmabi College, Kodugallur, Thrissur District. Separate booths were set up for evaluating the products. Mineral water was kept besides each booth. The panel members were instructed to rinse their mouth and have a sip of water after finishing each product's sensory evaluation. Score card mentioning the hedonic scale was provided to each panel member. Each product's economic acceptability and sensory score was recorded by the panelist. Quality of the products were analysed by statistical method in Microsoft excel. Economic acceptability was analysed based on the panelist's reaction in the score sheet after using the product.

Plate 2. Sensory evaluation of product

Results And Discussion

Value added product from crab (*Sylla serrata*), murukk, was successfully made and evaluated their sensory functions using hedonic scale. Data analysis was done by excel and they were interpreted.

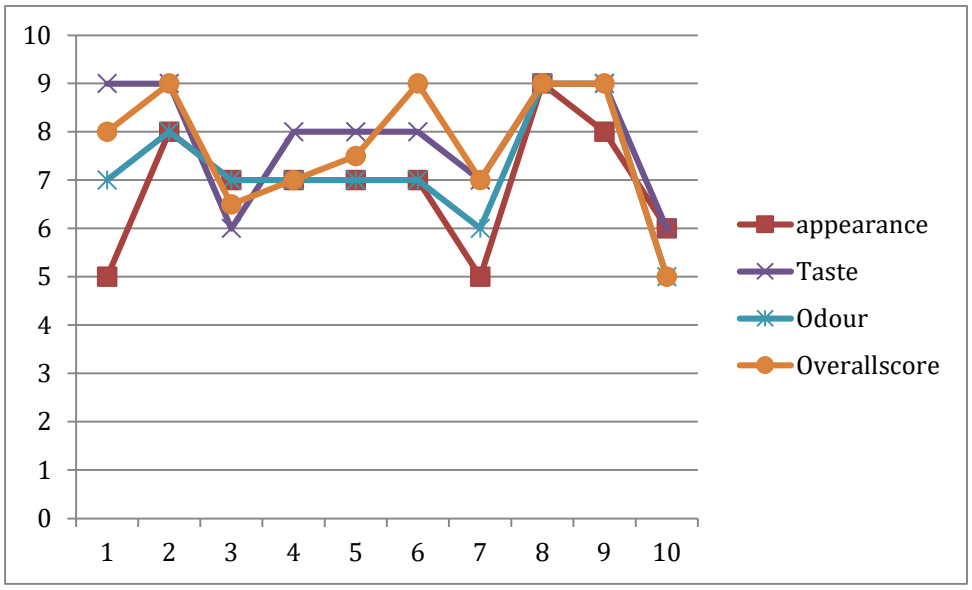

Figure : 1 Line graph showing appearance taste, Odour and overall score of product A

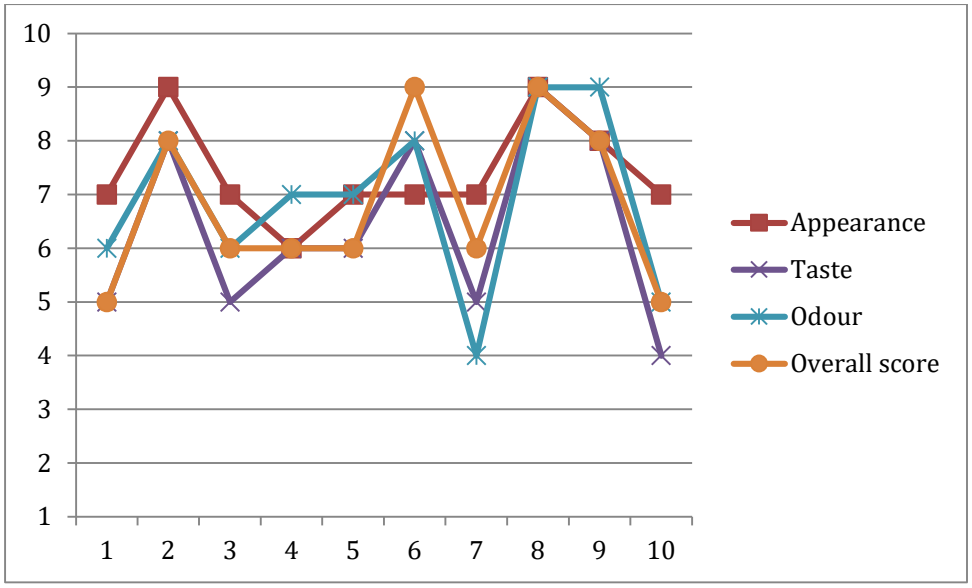

Figure: 2 Line graph showing appearance taste, Odour and overall score of product B

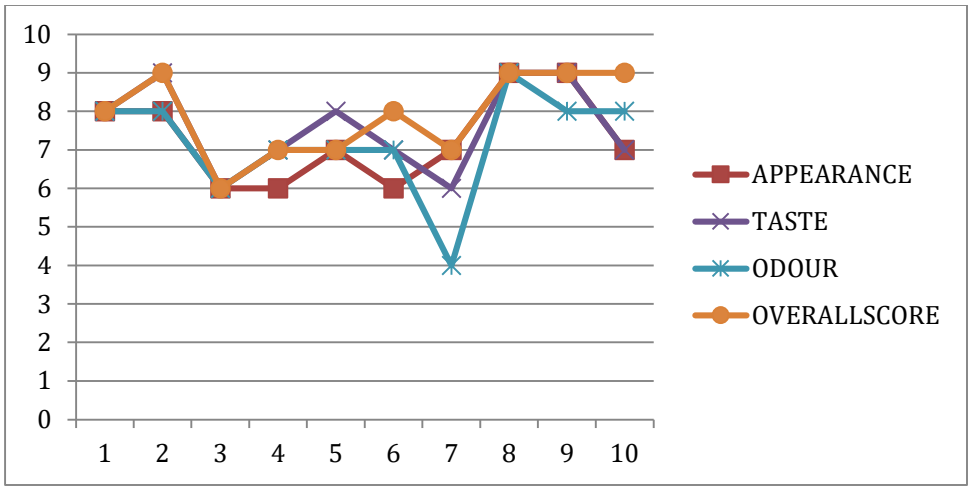

Figure: 3.Line graph showing appearance taste, Odour and overall score of product C

Figure 1, 2 and 3 were analyzed and interpreted as per hedonic scale values. 9 point hedonic scale is the most widely used scale for food acceptability. David et al had developed the **scale** at the Quartermaster Food and Container Institute of the U.S. Armed Forces, for the purpose of measuring the food preferences of soldiers.

Hedonic Scale values

9	Excellent
8	Very good
7	Good
6	Fair
5	Average
4	Poor

3	Very poor
2	Bad
1	Unfit for consumption

By analyzing the graphs as per hedonic scale product A shows better performance. It shows overall score above average. In Product B and C it shows poor odour for the product rest of things are average and above average. So as per the study, Product A, product made using crab is recommend.

As per fig.3, products rates can be fixed as Rs. 40 . Crab murukk with ingredients in product A with rate Rs 40 per kilogram can be recommend for common people. Figures given below shows the products A, B and C respectively.

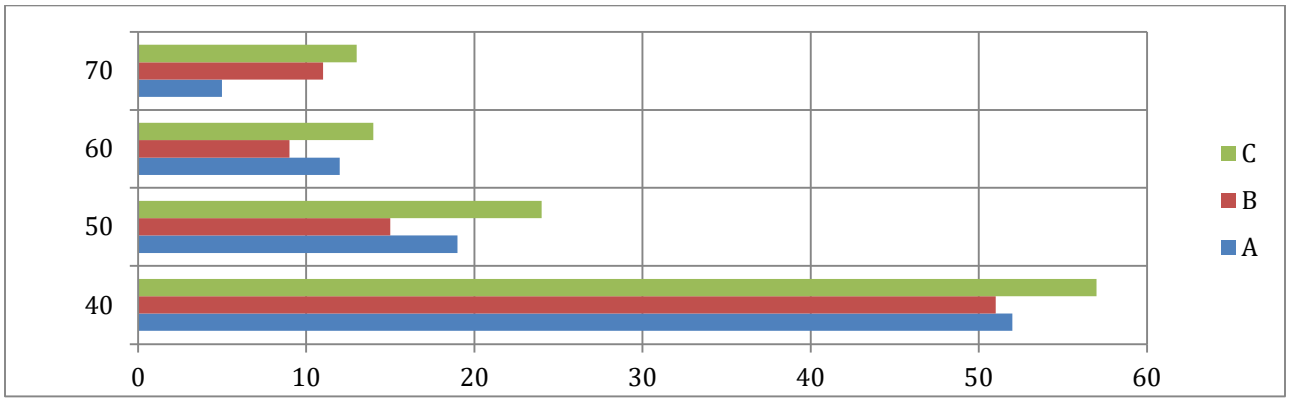

Fig: 3 Price fixation table of product A, B and C

Conclusion

Some of the consumers find crab shell as a hindrance in consuming crab. Hence despite its taste, tends to keep away from it. The objective of the present study was to produce easy-to-eat value added products from crab. Murukku, a traditional savory product popular in southern India.was identified for this purpose, as they are low in protein and mineral contents. The main ingredient for all types “murukku” is rice flour. Prepared three value added products namely, product A, product B and product C. Product A was prepared using only crab meat and product B was prepared using crab meat, fish meat and egg and product C was prepared using crab meat and fish meat. The Panel members were selected from the faculty and students of M.E.S Asmabi College, Kodugallur, Thrissur District. Separate booths were set up for evaluating the products. Mineral water was kept besides each booth. The panel members were instructed to rinse their mouth and have a sip of water after finishing each product’s sensory evaluation. Score card mentioning the hedonic scale was provided to each panel member. Each product’s economic acceptability and sensory score was recorded by the panelist. Quality of the products were analysed by statistical method in Microsoft excel. Economic acceptability was analysed based on the panelist’s reaction in the score sheet after using the product. Crab murukk with ingredients in product A with rate Rs 40 per kilogram was recommend by panelists.

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