

A preliminary study on scientific background of the women's indigenous knowledge in making Ambulthiyal (sour fish curry) in Matara, Sri Lanka

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Introduction

The knowledge which is specific to a particular culture or a society is referred as the indigenous knowledge (Grenier, 1998) and it includes local knowledge, skills and practices that developed over ages, and passed down through the generations. (Ibnouf 2012) This collective knowledge is mainly focused to the survival and future wellbeing of local communities especially in difficult environmental conditions (Parrotta & Agnolett, 2007). Food security is a critical factor that directly affects the survival and future wellbeing of the human communities. In order to ensure the food security, food processing and preserving play a key role which increase the value and the shelf life of perishable foods (Osunbitan, et al. 2000). Therefore there is a vast body of indigenous knowledge on food processing and preservation activities which has been handed down from one generation to another. (Ibnouf, 2012). Fish and fish products have taken an important position in the Sri Lankan food culture since the prehistoric era and fish remains in prehistoric deposits reveal that the prehistoric man would have done fishing activities not only occasionally but also seasonally and regularly in the inland water bodies. (Weliange, 2010). However Sri Lankan fishery claims not only to a long history but also to a bulk of indigenous knowledge which includes fish processing and preserving techniques. In Sri Lankan

gender based society the indigenous knowledge of fish processing and preservation barred by women and they are the transformers of knowledge from one generation to another and they know the traditional tastes and flavors. (De Silva, 2011)

Drying, smoking and salting are the main indigenous fish preservation methods but their practice is limited to several areas of the country. Making sour fish curry which is locally called as "Ambulthiyal" is one of common indigenous fish processing and preserving method and it is in practise in Sri Lankan households as not only a preserving method but also a favorite dish. The taste and ingredients of the Ambulthiyal are varying with the area of the country and that is the variety of indigenous knowledge. In order to adapt to the changeable conditions, women gather new knowledge to their indigenous knowledge through innovation and through transfer of external knowledge and therefore there is a risk of the erosion of this indigenous knowledge as a result of modern knowledge that is regularly added (Ibnouf, 2012). Establishing a proper system of recording the useful indigenous knowledge about food, before they are completely lost is important since indigenous knowledge is a resource that is widely ignored at the current development process. (Ibnouf

,2012)Therefore the objective of the current study is to make a preliminary study about the scientific background of the women's indigenous knowledge in fish processing and preservation related to the making Ambulthiyal (sour fish curry) in order to record the indigenous knowledge in a systematic way and to make a foundation to further studies.

Methodology

25 women who engaged in food processing were selected from Matara area. Their knowledge in making Ambulthiyal was gathered via the discussions.

Results

The results indicated (in fig: 1) that 92% of the women gained the knowledge of making Ambulthiyal from the indigenous knowledge given by their mother and the rest of 8% got the knowledge from self experience (trial and error method).24% preferred to make modifications into the indigenous method but rest of 76% did not prefer because they value the traditional taste and flavor. Only 16% of the women were able to describe the scientific base of the making Ambulthiyal. But their explanations were not totally agreeable. 100% of woman preferred to use the marine big fish such as Tuna and 92% preferred to used the Ambulthiyal method with the marine small fish.32% of them are practicing Ambulthiyal method with fresh water fish since there is the availability of inland aquaculture in their native areas(Fig: 2).

Pepper (a), Goraka / gamboges (b), Rampe (*Pandanus amaryllifolius*) (c), Karapincha/curry leaves (*Murraya koenigii*) (d), Cinnamon (e) Kaha/tumeric (i) and salt(j),are the main ingredients that used in making Ambulthiyal which has 100% preference and Tamarind(f), Onion (g), Garlic (h) are used in some areas

according to their taste and flavor(fig:3).100% of woman preferred to use firewood hearth and clay vessels to make Ambulthiyal and 22% of the women were using heat in both up side and down side of the vessel. (Fig: 3)

The preparation method that was described by the women:

Gutted, cleaned and filleted fish is put in to a clay vessel and mixed with all ingredients mentioned above. Then adequate water is added and cooked in a hearth for several hours (1to 3) until all the water evaporates.

According to them, Ambulthiyal which is prepared by using this method can be kept about 2 weeks and this fish i ke various fish dishes. However they have not experienced any hazard of it.

Discussion

Fish is a highly perishable food item (Agbonet al., 2002) and it begins to spoil soon after the death of the fish (Tawari and Abowei, 2011). Fish spoilage is very rapid in tropical environments (Tawari and Abowei, 2011) since the microbial activities. The microbial growth can be reduced by decreasing the temperature, pH and water activity (Ghaly et al, 2010). Cooking and spicing can kill the microbes. Goraka/ gamboges (*Garcinia gummi-gutta*) and tamarind (*Tamarindus indica*) have natural organic acids which not only gain the sour taste to the Ambulthiyal but also result low pH level (Munasinghe, 1999). Ambulthiyal is cooked in a firewood hearth for 2-3 hours in a low heat and some women are used to use heat in both up side and down side. It helps to reduce the water activity. Cooking and spicing is not only preserving the fish but also add a taste and a value to the fish. Making Ambulthiyal can increase the shelf life of the fish by reducing the microbial growth. Long ago, the indigenous people used to make Ambulthiyal in order to

Fig: 1- knowledge gained from indigenous knowledge (a), the preference to the modifications (b) and ability to describe the scientific basic (c)



Fig: 2- major fish types used in making Ambulthiyal big marine fish (a), Small marine fish (b) and fresh water fish(c)

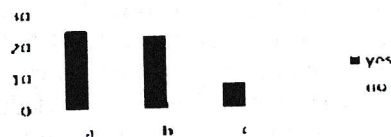
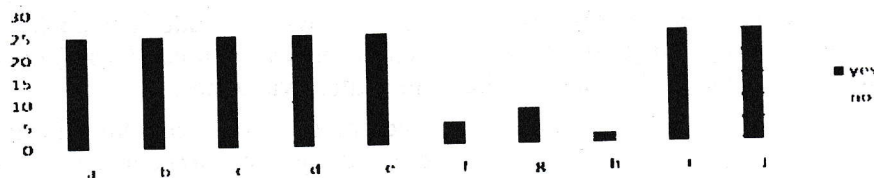


Fig: 3- Utilization of the ingredients to make Ambulthiyal. Pepper (a), Goraka /gamboges (b), Ramppe (c), Karapincha/curry leaves (d), Cinnamon (e), Tamarind (f), Onion (g), Garlic (h), Kaha/turmeric (i) and salt (j)



preserve the fresh fish because there were no chilling or freezing facilities. There is a hidden scientific base behind the women's indigenous knowledge of fish processing and preservation that woman don't know how to describe correctly but have been practising from generation to generation.

Conclusion

Fish is a major source of protein (Al-Jufaili and Opara, 2006) and Sri Lankan fishery sector contributes around 70% of the animal protein consumption in the country (MINISTRY OF FISHERIES AND AQUATIC RESOURCES, 2007). Post harvest loss is a great issue and making Ambulthiyal is one of indigenous fish processing and preserving method that based on reducing the microbial spoilage. Encouraging the value adding post harvest practices is important to minimize the post harvest losses and to improve the quality of the fish products. In that case indigenous knowledge plays a vital role because improving the indigenous fish processing and preserving methods has an advantage that they tally with the local environmental and socio economic

patterns. Majority of the indigenous knowledge is barred by the women and they should encourage sharing that with the next generation. Making a platform to discuss the scientific background of such knowledge is essential to preserve the indigenous knowledge and it helps to make a sustainable development.

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