

Assessment of knowledge, attitudes and perceptions of the community towards unutilized seaweed resource in Southern Sri Lanka

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Abstract

Although seaweed is a very versatile product widely used for food in direct human consumption this valuable resource is still unimportant in Sri Lankan diet. Therefore, objectives of this study were to measure the awareness level of the local community regarding seaweeds and propose suggestions to make use this unutilized resource. A purposive sample of 70 inhabitants who reside along the coastal belt of Tangalle fisheries was interviewed in October, 2014 using a structured questionnaire. Data were analyzed using SPSS 13.0 by performing Wilcoxon signed rank test and Chi-squared test. Although, most of the inhabitants interviewed have heard and seen seaweeds, only 5.7% of respondents stated that they have used seaweeds at least once in their lives. All inhabitants have seen green colored seaweeds followed by brown (79%) and red colored (54%). When measure the community awareness about abundance of seaweed species in the area using a herbarium, *Ulva* (52%) and *Padina* (43%) species were seen by the majority. However, about 33% has misinterpreted corals as seaweeds. There was a statistically significant relationship between education level and differentiation of seaweeds from coral ($\chi^2 (1) = 8.15$, $p = .004$). Though the community has a lack of awareness about seaweed consumption and its value added products, they believe that seaweeds comprise an ecological value ($z = -5.987$, $p < 0.05$). There is a potential for seaweeds culture in Sri Lanka. However, majority of the local community prefers to culture seaweeds if technology and credit facilities are available. It is proposed to conduct seminars for school children to disseminate the knowledge regarding utilization of seaweeds while conducting mobile workshops for the community. Cookery / nutritional programs telecasted through media can be used to alter the negative attitudes of the public which pertain to consumption of the value added seaweed products.

Keywords: seaweeds, unutilized resource, seaweeds culture, community awareness

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Introduction

Seaweeds or Marine macro algae are plant-like organisms attached to rock or other hard substrata in coastal areas (Lee, 1997). Classification of seaweeds is mainly based on pigmentation and storage materials and it is Chlorophyta (green algae), Phaeophyta (brown algae), Rhodophyta (red algae) (Dawes, 1981). Being rich in minerals, vitamins, trace elements and bioactive substances, seaweeds are called “medical food of the 21st century” and use to produce medicines mainly for cancers, iodine problems and HIV

(Sajid, 2003). Globally some 221 species of seaweed are utilized commercially. Of these, about 145 species are used for food (ibid). Asian countries such as China, Japan, Korea have a long history of seaweed consumption as a food and now it has been spreading out to Europe. Therefore, demand for seaweed is now rapidly increasing in the world market (ibid). Although seaweed is a very versatile product widely used for food in direct human consumption, this valuable resource is still unimportant in Sri Lankan diet. Therefore, objectives of this study were to measure the awareness level of the local community regarding seaweeds and educate the local people on the utilization of seaweed resource for a healthy and prosperous life.

Materials and Methods

A purposive sample of 70 inhabitants who reside along the coastal belt of Tangalle fisheries was interviewed in October, 2014 using a structured questionnaire. A herbarium was used to measure the awareness level of the community regarding the availability of different seaweeds. Research papers, journals and internet were used to collect secondary data. Data analysis was done using SPSS 13.0 by performing descriptive statistics and some non-parametric statistics such as Wilcoxon signed rank test and Chi-square test.

Results and discussion

Although, most of the inhabitants interviewed have heard and seen seaweeds only 5.7% of respondents were stated that they have used seaweeds at least once in their lives. About 1.4% of the people were tasted seaweeds in raw or processed form. All inhabitants have seen green colored seaweeds followed by brown (79%) and red colored (54%). When the community awareness about abundance of seaweed species in the area was measured using a herbarium, *Ulva* (52%) and *Padina* (43%) species were seen by the majority. However, about 33% has misinterpreted corals as seaweeds. Nevertheless, there was a statistically significant relationship between education level and differentiation of seaweeds from coral ($\chi^2 = 8.15$, $df = 1$, $p = .004$). Although the adult generation in the community has a lack of awareness about seaweed consumption, school children are somewhat aware about the uses of seaweeds. This fact was proved by the chi square test results as there was a statistically significant relationship between education level and knowledge about uses of seaweeds ($\chi^2 = 9.42$, $df = 1$, $p = .002$). However, other demographic factors such as age and gender did not show any statistically significant relationship with the knowledge about uses of seaweeds. Although community did not have a proper knowledge about seaweeds and

value added products of seaweeds, they believe that seaweeds comprise an ecological value (Table 1).

Table 1: Wilcoxon signed rank test results

Awareness about the seaweed consumption	Mean	Z value	Remarks
We can eat seaweeds	2.76	-1.938	Not significant
Seaweeds have medical value	3.44	-3.524*	Neither agree or disagree
Seaweeds have high nutrition value	3.06	-.756	Not significant
Awareness about the ecological value of seaweed			
Seaweeds can clean the costal seawater	3.64	-5.336*	Agree
Provide habitats and foods for many animals	3.83	-5.987*	Agree
Awareness about the value added of seaweed			
Seaweeds can used to produce food products	2.63	-2.920*	Neither agree or disagree
Seaweeds can used to produce pharmaceutical products	3.03	-.108	Not significant
Seaweeds can used to produce cosmetics	2.77	-2.35*	Neither agree or disagree
Seaweeds can used to produce sanitary items	2.77	-2.815*	Neither agree or disagree

*Significant at $p < 0.05$

Field survey, 2014

Sri Lanka has a favorable condition for natural growth of seaweeds (FAO, 2002). However, carrying out feasibility studies for seaweed culture in this region is vital to make use this unutilized seaweed resource as an income generating business. Findings revealed that 74% of the people prefer to culture seaweeds if provided culture techniques (63%) and credit support (37%). Therefore on-going projects of NARA for seaweed culture can be applied for Southern coastal line as pilot project to develop a suitable growing technology to cater the demand arising from the community.

Conclusion and recommendations

In conclusion, this study showed that the local community has a poor knowledge, lack of skills and negative attitudes about the consumption of the seaweeds. However, majority of the local community would prefer to culture seaweeds if technology and credit facilities are available. Therefore, it is recommended to first make the community aware about value of the seaweeds by organizing seminars for school children while conducting mobile workshops for the community. Cookery / nutritional programs telecasted through media can be used to alter the negative attitudes of the public which pertain to consumption of the value added seaweed products.

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