

DIVERSITY OF WILD VEGETABLES OF SANDWIP ISLAND IN CHITTAGONG, BANGLADESH

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ABSTRACT

An extensive investigation on the diversity of wild edible vascular plants of Sandwip Island in Chittagong district, Bangladesh has been conducted during August 2008 to September 2011. The present study has revealed a total of 39 species of wild edible vascular plants under 27 genera in 19 families. The people used various wild vascular plant parts like leaves, stem, fruit etc. as a source of food in the studied area. Many rural people of the area are mostly dependent on wild vascular plants as their source of vegetables in their daily life. But, the wild vegetable resources of the area are decreasing day by day due to excessive collection of plants and habitat destruction. So, a documentation of these plant resources is needed in order to domesticate them for sustainable use.

Key words: Wild edible vegetables, Sandwip, Bangladesh.

INTRODUCTION

Sandwip is an isolated island in Chittagong district of Bangladesh. A wide diversity of wild edible vegetables has been reported to be used in Sandwip Island. The people used a wide range of wild vascular plants traditionally in the island. They are mostly dependent on wild plants for the source of vegetables. The collection of plants and the process of cooking of the collected vegetables also varied among the villagers. There are some reports on use of vegetables in Bangladesh like Rashid (1976, 1999), Siddiqui and Khan (1999), Uddin *et al.* (2002), Hoq (2003), Rana *et al.* (2009), Kibria and Anik (2010). There is no such report on wild vegetables of Sandwip Island. The present study aims to document all the information of plant use as vegetables by the local people.

MATERIALS AND METHODS

Sandwip island with an area of 762.42 sq. km. is located 22°22'-22°34'N and 91°26'- 91°34' E. It is situated in the tropical monsoon climatic zone (Banglapedia 2006 and Figure-1). The presented data has been collected through repeated field trips during August 2008 to September 2011. During

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documentation field interview and plant interview techniques have been followed (Alexiades 1996)

The information has been noted in the documentation data sheet. During the documentation, photographs of plants has taken by digital camera and data obtained from informants were noted in a data sheet. In addition, the conversations have been recorded through digital video recorder. Vernacular name, habit, habitat, availability, mode of preparation and frequency of plants have been observed. All the voucher specimens have been collected during documentation. Proper herbarium techniques followed and all the specimens preserved at the Chittagong University Herbarium (CTGUH). The specimens have been identified consulting with the experts, by comparing herbarium specimens and studying several available literatures. Standard literature *viz.* Hooker (1872-1897), Prain (1903), Heinig (1925), Khan and Halim (1987), Ahmed *et al.* (2008-2009), Siddiqui *et al.* (2007a) and Siddiqui *et al.* (2007b) have also been consulted.



FIGURE-1: MAP OF THE STUDY AREA.

RESULTS AND DISCUSSION

During present investigation, a total of 39 wild edible vascular plant species under 27 genera in 19 families have been recorded as source of vegetables. The species have been arranged alphabetically following their scientific name, family name, vernacular name, habit, habitat, parts used, availability, mode of preparation, previous report and frequency of the plants have been presented respectively (Table-1). According to life form of the plants, the percentages of species have been used by the local people of study area and herbs dominate over shrubs and climbers (Figure-2).

TABLE-1: LIST OF WILD VEGETABLES OF SANDWIP ISLAND.

Scientific name	Family	Vernacular name	Habit	Habitat	Parts used	Availability	Mode of preparation and Reported/not reported	Frequency
<i>Alocasia macrorrhizos</i> (L.) G. Don	Araceae	Mankachu	Herb	Terrestrial	Stem	All season	Stem cooked as curry, R.	Occasional
<i>Alocasia odora</i> (Roxb.) Koch	Araceae	Hatal kachu	Herb	Terrestrial	Petiole	All season	Petioles cooked as curry, R.	Abundant
<i>Alpinia nigra</i> (Gaertn) Burt.	Zingiberaceae	Tara gas	Shrub	Terrestrial	Tuber	Monsoon	Tuber cooked as curry, R.	Occasional
<i>Alternanthera philoxeroides</i> Mart	Amaranthaceae	Molicha	Herb	Terrestrial	Leaf and stem	All season	Leaves and stem cooked as vegetables, R.	Abundant
<i>Alternanthera sessilis</i> (L.) R.Br. ex DC.	Amaranthaceae	Sachishak	Herb	Terrestrial	Leaf	Summer	Leaves fry as vegetables, R	Abundant
<i>Amaranthus spinosus</i> L.	Amaranthaceae	Katanotey	Herb	Terrestrial	Leaf	Summer	Leaves cooked as vegetables, NR.	Abundant
<i>Amaranthus viridis</i> L.	Amaranthaceae	Shaknote	Herb	Terrestrial	Leaf	Monsoon	Leaves cooked as vegetables, R.	Abundant
<i>Amorphophallus bulbifer</i> (Roxb.) Bl.	Araceae	Panka shak	Herb	Terrestrial	Leaf	Monsoon	Leaves cooked as vegetables, R.	Rare
<i>Amorphophallus paeoniifolius</i> (Dennst.) Nicolson var. <i>campanulatus</i> (Decne.) Sivadasan	Araceae	Panka shak	Herb	Terrestrial	Leaf	Monsoon	Leaves cooked as vegetables, R.	Rare
<i>Blumea lacera</i> (Burm.f.) DC.	Asteraceae	Army shak	Herb	Terrestrial	Young leaf	Winter	Young leaves fry as vegetables, NR.	Abundant
<i>Centella asiatica</i> (L.) Urban	Apiaceae	Adamkipata	Herb	Terrestrial	Leaf and stem	All season	Leaves and stem used as salad, R.	Abundant
<i>Centrostachys quatic</i> (Roxb.) Wallich	Amaranthaceae	Thus	Herb	Terrestrial	Stem	Monsoon	Stem cooked as curry, R.	Occasional
<i>Chenopodium album</i> L.	Chenopodiaceae	Battashak	Herb	Terrestrial	Leaf and stem	Winter	Leaves and stem fry as vegetables, R.	Abundant
<i>Coccinea cordifolia</i> (L.) Cogn.	Cucurbitaceae	Kelakachupata	Climber	Terrestrial	Leaf	Summer	Leaves cooked as curry, R.	Abundant
<i>Colocasia esculenta</i> (L.) Schott	Araceae	Kachu	Herb	Terrestrial	Leaf and petiole	All season	Leaves and petioles are cooked as curry, R.	Abundant
<i>Costus speciosus</i> (Koenig ex Retz.) Smith	Costaceae	Kew shak	Herb	Terrestrial	Leaf	Monsoon	Leaves cooked as vegetables, R.	Occasional
<i>Curcuma aeruginosa</i> Roxb.	Zingiberaceae	Banna Halud	Herb	Terrestrial	Leaf	Winter	Leaves cooked as curry, R.	Occasional
<i>Dioscorea alata</i> L.	Dioscoraceae	Bongalu	Climber	Terrestrial	Tuber	Monsoon	Tubers cooked as vegetable, R.	Occasional

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TABLE 1 (Contd.)

<i>Dioscorea pentaphylla</i> L.	Dioscoraceae	Banna alu	Herb	Terrestrial	Tuber	Monsoon	Tuber cooked as curry, R.	Occasional
<i>Eclipta prostrata</i> (L.) L.	Asteraceae	Kalakeccha	Herb	Terrestrial	Leaf	Summer	Leaves fry as vegetables, R	Abundant
<i>Ficus erecta</i> Thunb.	Moraceae	Ballagota	Shrub	Terrestrial	Young fruit	Winter	Young fruits cooked as curry, NR.	Rare
<i>Ficus racemosa</i> L.	Moraceae	Gajboy	Tree	Terrestrial	Fruit shel	Monsoon	Fruit shel cooked as vegetables, R.	Occasional
<i>Hedyotis corymbosa</i> (L.) Lam.	Rubiaceae	Dima shak	Herb	Terrestrial	Leaf and stem	Winter	Leaves and stem fry as vegetables, NR.	Frequent
<i>Hibiscus sabdariffa</i> L.	Malvaceae	Mesoth	Shrub	Terrestrial	Leaf	Summer	Leaves cooked as vegetables, R.	Occasional
<i>Homalomena aromatica</i> (Roxb. ex Sim) Schott	Araceae	Kachu	Herb	Terrestrial	Petiole	All season	Petioles are cooked as curry, R.	Occasional
<i>Hydrocotyle sibthorpioides</i> Lam.	Apiaceae	Adamkipata	Herb	Terrestrial	Leaf	All season	Leaves used as salad, R.	Abundant
<i>Hygrophila auriculata</i> (K. Schum.) Heine	Acanthaceae	Kanta Alisa	Herb	Aquatic	Leaf	Monsoon	Leaves fry as vegetables, NR.	Abundant
<i>Hygrophila difformis</i> (L.f.) Bl.	Acanthaceae	Alisa	Herb	Aquatic	Leaf	Monsoon	Leaves fry as vegetables, NR.	Frequent
<i>Hygrophila salicifolia</i> (Vahl) Nees	Acanthaceae	Bontil	Herb	Terrestrial	Leaf	Winter	Leave cooked as vegetables, NR.	Frequent
<i>Ipomoea aquatica</i> Forsk	Convolvulaceae	Kalmi	Climber	Aquatic	Leaf and stem	All season	Leaves and stem fry as vegetables, R.	Frequent
<i>Lasia spinosa</i> (L.) Thw.	Araceae	Bonhadda	Herb	Terrestrial	Stem	All season	Stem cooked as curry, R.	Abundant
<i>Nymphaea nouchali</i> Burm.f.	Nymphaeaceae	Shapla	Herb	Aquatic	Petiole	Monsoon	Petiole cooked as curry, R.	Abundant
<i>Nymphaea stellata</i> Willd	Nymphaeaceae	Nil sapla	Herb	Aquatic	Petiole	Monsoon	Petiole cooked as curry, R.	Occasional
<i>Piper retrofractum</i> Vahl	Piperaceae	Chailata	Climber	Terrestrial	Leaf	Monsoon	Leaves cooked as vegetables, NR.	Occasional
<i>Solanum torvum</i> Swartz	Solanaceae	Tikbion	Shrub	Terrestrial	Young fruit	Monsoon	Young fruits eaten as paste, R.	Abundant
<i>Solanum violaceum</i> Ortega	Solanaceae	Titbion	Shrub	Terrestrial	Fruit	All season	Fruits cooked as vegetables, R.	Occasional
<i>Solanum virginianum</i> L.	Solanaceae	Bonnabion	Herb	Terrestrial	Young fruit	Summer	Young fruits cooked as vegetables, NR.	Rare
<i>Stenochlaena palustris</i> (Burm.f.) Bedd.	Stenochlaenaceae	Dei shak	Climber	Terrestrial	Young frond	Monsoon	Young fronds cooked as vegetables, R.	Abundant
<i>Xanthium indicum</i> Koen. ex Roxb.	Asteraceae	Gagra	Shrub	Terrestrial	Leaf	Winter	Leaves cooked as vegetables, NR.	Abundant

Legend: R= reported, NR= not reported

Various parts of the plants *viz.* leaf, stem, tuber and fruit have been observed to be used for processing of vegetables. All these plants were collected from wild habitat. From the study it is also revealed that they use leaves more than other plant parts as source of vegetables (Figure-2).

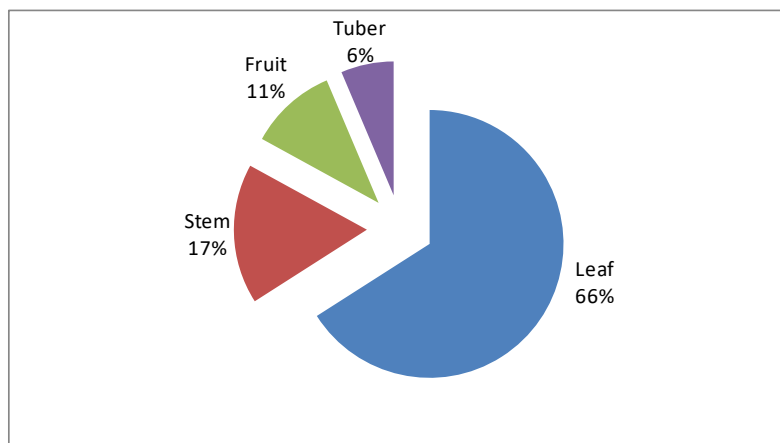


FIGURE-2: PERCENTAGE OF PLANT PARTS OF WILD VEGETABLES USED BY LOCAL PEOPLE.

The recorded species included 18 angiosperms families and only pteridophyte family. Most frequently used species have been documented from Araceae, Amaranthaceae, Solanaceae, Acanthaceae and Asteraceae respectively (Figure-3). Most of these plants were mesophytic in nature and some were hydrophytic. Most of these plants were found in waste lands, along the road sides and canals.

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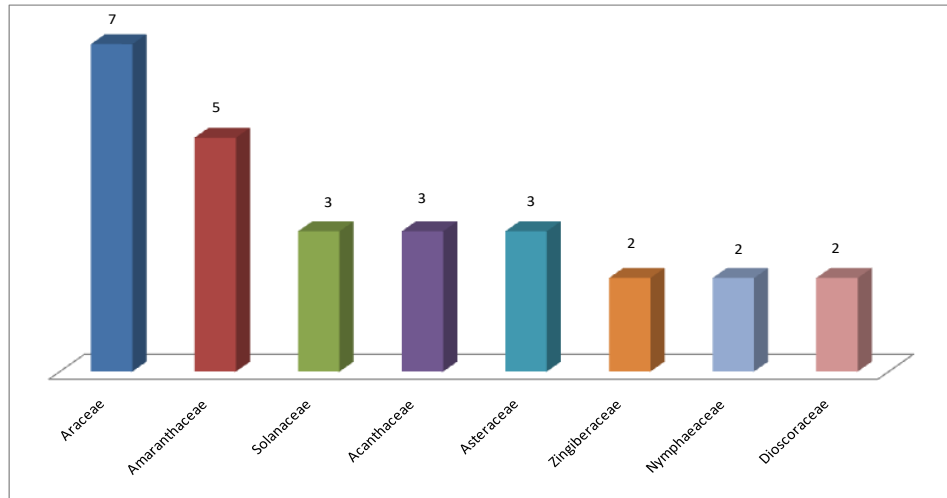


FIGURE-3: DOMINANT WILD VEGETABLE FAMILIES IN SANDWIP ISLAND.

From the study it has been observed that most of the plants were seasonal and available during certain period of time. In the studied area, Monsoon appears to be the highest for the availability of vegetables whereas summer appears to be lowest (Figure-4).

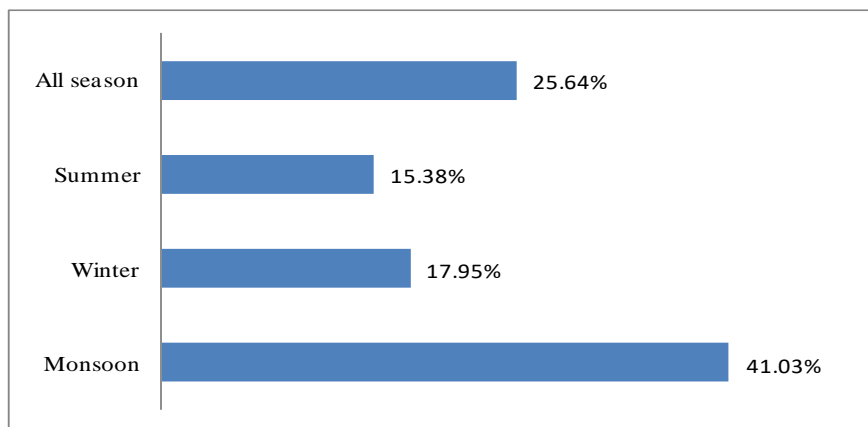


FIGURE-4: AVAILABILITY OF WILD VEGETABLES IN THE STUDIED AREA.

There is no previous record on wild vegetables as a source of food in the studied area. In the present study, among the recorded species, most of them have been reported as vegetables by Ahmed *et al.* 2008-2009, Siddiqui *et al.* 2007a and 2007b from other parts of Bangladesh. But the following ten species have not been previously recorded viz. *Amaranthus spinosus* L., *Blumea lacera* (Burm.f.) DC., *Ficus erecta* Thunb., *Hedyotis corymbosa* (L.) Lam., *Hygrophila auriculata* (K. Schum.) Heine, *Hygrophila difformis* (L.f.) Bl., *Hygrophila salicifolia* (Vahl) Nees, *Piper retrofractum* Vahl, *Solanum virginianum* L. and *Xanthium indicum* Koen. ex Roxb. These wild vegetables should be taken as under consideration for cultivation as promising vegetables and to fulfill nutritional demand of the country.

ACKNOWLEDGEMENT

The authors express their deep sense of gratitude to the informants and the local men and women who helped them in many different ways during the field work. Authors are grateful to Prof. Dr. M K Pasha, Department of Botany for his valuable suggestions and criticism during preparing this manuscript and to identify some critical specimens. Authors are also grateful to Mr. Samsuddin, Vaternary Trainee Assistant, Sandwip, Chittagong for his help in collection of data, identifying the local uses and names of wild vegetables.

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Manuscript received on 30.11.2011; Accepted on 11.02.2014

The Chittagong University Journal of Biological Sciences, Vol. 7 (1 & 2). Page No.