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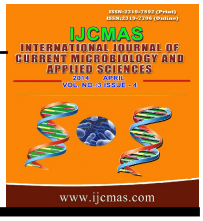

Original Research Article

Diversity of leafy vegetables used by tribal peoples of Chhattisgarh, India

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Keywords

Identification, leafy vegetables, Durg.

A B S T R A C T

In India, the leaves of a large number of wild and cultivated plants are used as vegetables. They have a very high protective food value and are very easy to grow. In Chhattisgarh, the life and economy of the tribal and local people are intimately connected with the natural vegetation. Leafy vegetables play a major role in the nutritional requirement of the tribal and local population in remote parts of the Chhattisgarh. Leafy vegetable not only provide food quantity but also make significant contribution to the population nutrition throughout the year. The use of leafy vegetables as food has been formed an integral part of the culture and tradition of many indigenous communities of the world. It constitutes an essential component in the diet and food security of many tribal and local communities particularly people living around the forest fringe. The present study on identification and documentation of leafy vegetable revealed that the tribal and local population living in remote areas. often do very little cultivation; they ate a variety of leafy vegetables. The 51 such leafy vegetables that were eaten by the tribal and local people of Chhattisgarh are described in this study .The information was based on an ethno-botanical field study of the the different parts of Durg dist .The study showed that; a large amount of cultivated leafy vegetables as well as weed plants used as vegetable of Durg region are having an edible and nutritional values.

Introduction

Traditional leafy crops are important fresh crops during the rainy season. They are especially important in dried form during winter and spring seasons. The availability of leafy vegetables in dried form on the local market as a source of cheap protein and as a winter vegetable is, however, limited. Leafy vegetables are in general readily available in this region. Wild plants such as, *Amaranthus species*, *Borhaavia diffusa*, *Basell rubra*, *Cleome gynandra*, *Chenopodium species* *Corchorus* species,*Leucas cephalotes*, *Hibiscus cannabinus*, and *Trianthema portulacastrum* are very popular and still are widely available in the communities.

It is estimated that in India about 800 species are consumed as wild edible plants over the country (Singhand Arora 1978). Wild edible plants not only provide food quantity but also make significant contribution to the population nutrition throughout the year (Grivetti and Ogle Britta, 2000; Ogle Britta, 2001; Ogle Britta *et al.*, 2001; Ogle Britta et al.,2003). The tribals normally collect seeds of local forest product and sell them to earn their livelihood. Also the diversity of leafy vegetable species offer variety in family diet and contribute to household food security as well as increase dietary diversity. Further, it provides rural households with supplemental income opportunities through their sale in the markets.

In view of above, the present study was conducted to achieve the goal by covering the followingobjectives:-

1. Identification of leafy vegetables plant species in Durg dist.
2. Documentation of identified leafy vegetables in the study area.
3. Ethnobotanical uses of edible plant species.

Study area

Durg District is situated in Chhattisgarh state of India covers an area of 8,537 km². The population in 1991 was 2, 397,134 of which 12.4% were members of scheduled tribes

Materials and Methods

The field study was carried out in the villages and forest villages of the different region of Durg dist.

Methodology covers two types of survey namely:
1. Field Survey
2. Literature Collection

The main aim of the survey was to collect information about the leafy vegetables plant species which are used by the tribal and local peoples and also the species are identified and documented by collecting samples of plant species.The identified and collected plant samples were arranged and documented according to their local names,in different tribal and local languages . The total respondents were 30-35 in numbers per villages to collect information on leafy vegetables, along with the information and identification from forest department about the local names and utilization of wild edible plants of the study area.

Results and Discussion

Identified species classified on the basis of habit

The information given in the species list above has been analysed in the following paragraphs. Species are classified on the basis of the habit -

Tree (5 species out of 51 species of plants)

Bauhinia purpurea, Cordia myxa Roxb., *Ficus religiosa* L. *Moringa pterygosperma* Lam., *Shorea robusta*

Herbs (46 species out of 51 species of plants)

Allium cepa L., *Amaranthhus gangaticus* L., *Amaranthus spinosus* L., *Amaranthus tricolour* L., *Amaranthus viridis* L., *Basella rubra* L., *Boerhaavia diffusa* L.

Brassica compestris L., *Brassica oleracea botrytis* L., *Brassica oleracea var. capitata* L, *Brassica oleracea var.caularpa* L., *Capsicum annum* L., *Carthemnus oxycantha* L., *Cassia tora* L., *Chenopdium album* L., *Chorchorus olitorius* L., *Cicer arietinum* L, *Cleome viscosa, Colocasia antiquarum* Schott. , *Commelina benghalensis* L., *Corchorus acutangulus* Lam., *Cucumus sativus, Cucurbita maxima* Duch., *Daucus carota, Dolicus lablab, Hibiscus cannbinus* L., *Hibiscus sabdariffa* L. *Ipomoea aquatica* Frosk., *Ipomoea batatas* Lam., *Lagenaria vulgaris, Lathyrus sativa* L., *Lathyrus sp., Leucas cephalotes* Spreng., *Marsilea vestita* Hook & Grev., *Merremia emarginata* Burmf, *Momordica charantia, Oxalis corniculata, Partulaca oleracea* L. *Phaceolus radiatus* L., *Phaseolus vulgaris, Raphanus sativus* L., *Solanum tuberosum* L., *Spinacea glabra* L., *Spinacea oleracea* L.,*Trianthema portulacastrum* L., *Trigonella foenum graceum* L.

Identified species classified on the basis of usage:

The information given in the species list above has been analysed in the following paragraphs. Species are classified on the basis of the parts used and how they are used**.**

Plant parts used

1. **Fruits (**07 species out of 51 species of plants**)**

Cordia myxa Roxb., *Capsicum annum* L.,*Cucumus sativus., Cucurbita maxima* Duch., *Ficus religiosa* L., *Lagenaria vulgaris., Momordica charantia* .,*Moringa pterygosperma* Lam.

2. **Seeds (**10 species out of 51 species of plants**)**

Brassica compestris L , *Cassia tora* L., *Chenopdium album* L. *Cicer arietinum* L, *Cleome viscosa., Momordica charantia., Phaceolus radiatus* L. ., *Phaseolus vulgaris,, Moringa pterygosperma* Lam., *Shorea robusta., Trigonella foenum graceum* L.

3. **Leaves (**51 species out of 51 species of plants**)**

Allium cepa L., *Amaranthhus gangaticus* L., *Amaranthus spinosus* L., *Amaranthus tricolour* L., *Amaranthus viridis* L., *Basella rubra* L., *Bauhinia purpurea, Boerhaavia diffusa* L. *Brassica compestris* L., *Brassica oleracea botrytis* L., *Brassica oleracea var. capitata* L, *Brassica oleracea var.caularpa* L., *Capsicum annum* L., *Carthemnus oxycantha* L., *Cassia tora* L., *Chenopdium album* L., *Chorchorus olitorius* L., *Cicer arietinum* L, *Cleome viscosa, Cordia myxa* Roxb., *Colocasia antiquarum* Schott. , *Commelina benghalensis* L., *Corchorus acutangulus* Lam., *Cucumus sativus, Cucurbita maxima* Duch., *Daucus carota, Dolicus lablab, ., Ficus religiosa* L, *Hibiscus cannbinus* L., *Hibiscus sabdariffa* L. *Ipomoea aquatica* Frosk., *Ipomoea batatas* Lam., *Lagenaria vulgaris, Lathyrus sativa* L., *Lathyrus sp., Leucas cephalotes* Spreng., *Marsilea vestita* Hook & Grev., *Merremia emarginata* Burmf, *Momordica charantia, Moringa pterygosperma* Lam., *Oxalis corniculata, Partulaca oleracea* L. *Phaceolus radiatus* L., *Phaseolus vulgaris, Raphanus sativus* L., *Solanum tuberosum* L., *Spinacea glabra* L., *Spinacea oleracea* L., *Shorea robusta.,Trianthema portulacastrum* L., *Trigonella foenum graceum* L.

4. **Roots, tubers, or bulb (7** species out of 51 species of plants**)**

Allium cepa L .,*Boerhaavia diffusa* L.,

The identified and collected plant samples were arranged and documented according to their local names, in different tribal and local languages

Sl.no.	Comman name	*Botanical name*	Family	Habit	Ethnobotanically important plant part
1.	Aloo Bhaji	*Solanum tuberosum* L.	Solanaceae	Cultivated	Leaves and tubers
2.	Amari Bhaji	*Hibiscus sabdariffa* L.	Malvaceae	Cultivated	Leaves
3.	Amrul, Amblit or tinpania Bhaji	*Oxalis corniculata*	Oxalidaceae	Weeds	Leaves
4.	Bandhgobhi Bhaji	*Brassica oleracea var. capitata* L.	Brassicaceae	Cultivated	Leaves
5.	Barbatti Bhaji	*Phaseolus vulgaris*	Papilionaceae	Cultivated	Leaves ,pod and seed
6.	Bathua Bhaji	*Chenopdium album* L.	Chenopodiaceae	Weeds	Leaves and seeds
7.	Bohar Bhaji	*Cordia myxa* Roxb.	Boraginaceae	Weeds	Leaves,bark,fruits and seed
8.	Chana Bhaji	*Cicer arietinum* L	Papilionaceae	Cultivated	Leaves and seeds
9.	Charota Bhaji	*Cassia tora* L.	Caesalpiniaceae	Weeds	Leaves and seeds
10.	Chaulai Bhaji	*Amaranthus viridis* L.	Amaranthaceae	Cultivated	Leaves and stem
11.	Chaulai Kata	*Amaranthus spinosus* L.	Amaranthaceae	Weeds	Leaves and stem
12.	Chech Bhaji	*Chorchorus olitorius* L.	Tiliaceae	Cultivated	Leaves
13.	Chunchunia Bhaji	*Marsilea vestita* Hook & Grev.	Marsileaceae	Weeds	Leaves
14.	Gajar bhaji	*Daucus carota*	Brassicaceae	Cultivated	Leaves and roots
15.	Ganthgobhi Bhaji	*Brassica oleracea var.caularpa* L.	Brassicaceae	Cultivated	Stem
16.	Gobhi Bhaji	*Brassica oleracea botrytis* L.	Brassicaceae	Cultivated	Leaves and inflorescence
17.	Gol Bhaji	*Partulaca oleracea* L.	Partulacaceae	Weeds	Leaves,stem and whole plant
18.	Gumee Bhaji	*Leucas cephalotes* Spreng.	Lamiaceae	Weeds	Leaves , flower and stem
19.	Haramgi or Hargi Bhaji	*Shorea robusta L.*	Dipterocarpaceae	Weeds	Bark ,wood ,resin, seeds and young leaves
20.	Hurhuria bhaji	*Cleome viscosa*	Capparidaceae	Weeds	Leaves and seeds
21.	Jadi Bhaji	*Amaranthhus gangaticus* L.	Amaranthaceae	Weeds	Leaves and stem
22.	Jillo Bhaji	*Lathyrus sp.*	Papilionaceae	Weeds	Leaves
23.	Kakdi bhaji	*Cucumus sativus*	Cucurbitaceae	Cultivated	Leaves and fruits

24.	Kanda Bhaji	*Ipomoea batatas* Lam.	Convolvulaceae	Cultivated	Leaves and tubers
25.	Karela bhaji	*Momordica charantia*	Cucurbitaceae	Cultivated	Leaves, fruits,roots and seeds
26.	Karmota Bhaji	*Ipomoea aquatica* Frosk.	Convolvulaceae	Weeds	Leaves
27.	Kaunaakeny Bhaji	*Commelina benghalensis* L.	Commelinaceae	Weeds	Leaves
28.	Kochai Bhaji	*Colocasia antiquarum* Schott.	Araceae	Cultivated	Leaves
29.	Koliaari Bhaji	*Bauhinia purpurea* L.	Caesalpiniaceae	Tree	Stem bark,flowers and leaves
30.	Kumda Bhaji	*Cucurbita maxima* Duch.	Cucurbitaceae	Cultivated	Leaves and fruits
31.	Kusum Bhaji	*Carthemnus oxycantha* L.	Asteraceae	Weeds	Leaves
32.	Lakhadi Bhaji	*Lathyrus sativa* L.	Papilionaceae	Cultivated	Leaves
33.	Lal Bhaji	*Amaranthus tricolour* L.	Amaranthaceae	Cultivated	Leaves and stem
34.	Lauki bhaji	*Lagenaria vulgaris*	Cucurbitaceae	Cultivated	Leaves and fruits
35.	Masaria Bhaji	*Corchorus acutangulus* Lam.	Tiliaceae	Weeds	Leaves
36.	Methi Bhaji	*Trigonella foenum graceum* L.	Papiolionaceae	Cultivated	Leaves and seeds
37.	Mirchi Bhaji	*Capsicum annum* L.	Solanaceae	Cultivated	Leaves and fruits
38.	Mooli Bhaji	*Raphanus sativus* L.	Brassicaceae	Cultivated	Leaves and root
39.	Munga Bhaji	*Moringa pterygosperma* Lam.	Moringaceae	Tree	Leaves ,root,root bark,flowers,fruits and seeds
40.	Muskeny Bhaji	*Merremia emarginata* Burmf	Convolvulaceae	Weeds	Leaves
41.	Palak Bhaji	*Spinacea oleracea* L.	Chenopodiaceae	Cultivated	Leaves
42.	Palak Bhaji (Khatta)	*Spinacea glabra* L.	Chenopodiaceae	Cultivated	Leaves
43.	Patawa Bhaji	*Hibiscus cannbinus* L.	Malvaceae	Weeds	Leaves
44.	Patharri Bhaji	*Boerhaavia diffusa* L.	Nyctaginaceae	Weeds	Fresh whole plant, roots, leaves and flowers
45.	Pipal Bhaji	*Ficus religiosa* L.	Urticaceae	Tree	Bark ,shoot ,leaves and fruits,wood
46.	Poi Bhaji	*Basella rubra* L.	Basellaceae	Weeds	Leaves
47.	Pyaj Bhaji	*Allium cepa* L.	Liliaceae	Cultivated	Leaves and bulb(Red variety)
48.	Salsa Bhaji	*Trianthema portulacastrum* L.	Aizoaceae	Weeds	Leaves
49.	Sarson Bhaji	*Brassica compestris* L.	Brassicaceae	Cultivated	Leaves and seeds
50.	Sem bhaji	*Dolicus lablab*	Papilionaceae	Cultivated	Lleaves and pod
51.	Urad Bhaji	*Phaceolus radiatus* L.	Papilionaceae	Cultivated	Leaves and seeds

Amaranthus viridis L.(10) *Spinacea glabra* L.*(42)* *Cucurbita maxima* Duch.(30) *Cleome viscose(20)*

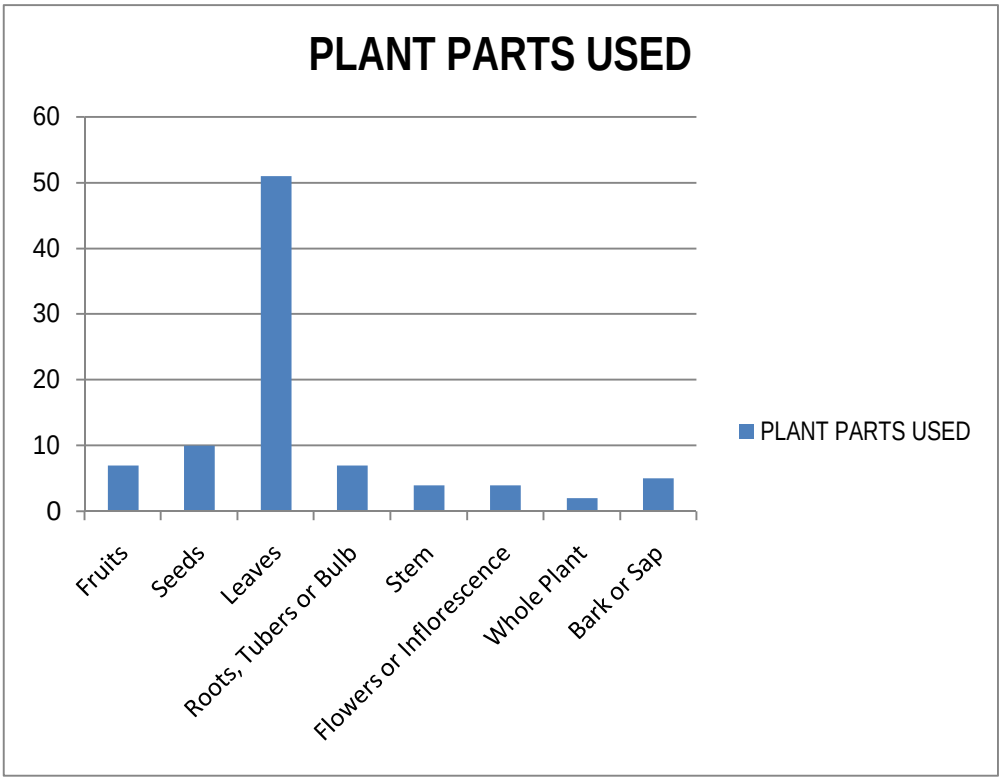
Marsilea vestita Hook & Grev. (13) *Raphanus sativus* L.*(38) Brassica oleracea botrytis* L.(16)*Lagenaria vulgaris(34)*

Spinacea oleracea L.(41) *Colocasia antiquarum* Schott.(28) *Capsicum annum* L.(37) *Cicer arietinum* L(8)

Allium cepa L.*(47)* *Corchorus acutangulus* Lam.(35) *Leucas cephalotes* Spreng.(18) *Daucus carota(14)*

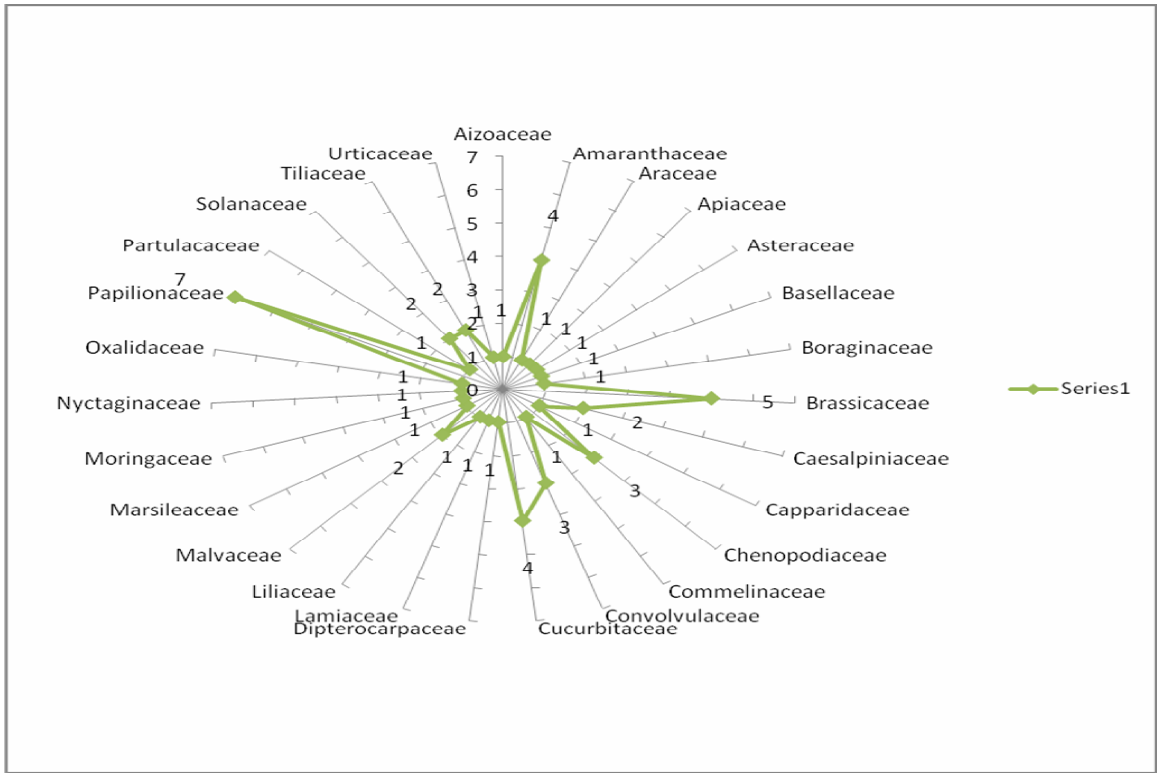
Brassica oleracea var.caularpa L. *Dolicus lablab(50)* *Raphanus sativus(38)* *Cassia tora(9)*

Trigonella foenum graceum L(38). *Commelina benghalensis* L *(27) Partulaca oleracea* L.*(17)Cordia myxa* Roxb.(7)



1.	Aizoaceae	(1 species out of 51 species of plants)	*Trianthema portulacastrum* L.	1
2	Amaranthaceae	4 species out of 51 species of plants	*Amaranthus viridis* L., *Amaranthus spinosus* L., *Amaranthhus gangaticus* L., *Amaranthus tricolour* L.	4
3	Araceae	1 species out of 51 species of plants	*Colocasia antiquarum* Schott.	1
4	Apiaceae	1 species out of 51 species of plants	*Daucus carota,*	1
5	Asteraceae	1 species out of 51 species of plants	*Carthemnus oxycantha* L	1
6	Basellaceae	1 species out of 51 species of plants	*Basella rubra* L.	1
7	Boraginaceae	1 species out of 51 species of plants	*Cordia myxa* Roxb.	1
8	Brassicaceae	6 species out of 51 species of plants	*Brassica compestris* L.,*Brassica oleracea var. capitata* L., *Brassica oleracea botrytis* L., *Brassica oleracea var.caularpa* L., *Raphanus sativus* L.	5
9	Caesalpiniaceae	2 species out of 51 species of plants	*Cassia tora* L., *Bauhinia purpurea* L	2
10	Capparidaceae	1 species out of 51 species of plants	*Cassia tora* L	1

11	Chenopodiaceae	3 species out of 51 species of plants	*Chenopdium album* L., *Spinacea oleracea* L., *Spinacea glabra* L	3
12	Commelinaceae	1 species out of 51 species of plants	*Commelina benghalensis* L.	1
13	Convolvulaceae	3 species out of 51 species of plants	*Ipomoea batatas* Lam., *Ipomoea aquatica* Frosk., *Merremia emarginata* Burmf.	3
14	Cucurbitaceae	4 species out of 51 species of plants	*Cucumus sativus*, *Cucurbita maxima* Duch., *Momordica charantia*, *Lagenaria vulgaris*	4
15	Dipterocarpaceae	1 species out of 51 species of plants	*Shorea robusta L.*	1
16	Lamiaceae	1 species out of 51 species of plants	*Leucas cephalotes* Spreng.	1
17	Liliaceae	1 species out of 51 species of plants	*Allium cepa* L.	1
18	Malvaceae	2 species out of 51 species of plants	*Hibiscus cannbinus* L. *Hibiscus sabdariffa* L.,	2
19	Marsileaceae	1 species out of 51 species of plants	*Marsilea vestita* Hook & Grev.	1
20	Moringaceae	1 species out of 51 species of plants	*Moringa pterygosperma* Lam.	1
21	Nyctaginaceae	1 species out of 51 species of plants	*Boerhaavia diffusa* L.	1
22	Oxalidaceae	1 species out of 51 species of plants	*Oxalis corniculata*	1
23	Papilionaceae	7 species out of 51 species of plants	*Cicer arietinum* L., ,*Dolicus lablab.,Lathyrus sp.*, *Lathyrus sativa* L., *Phaceolus radiatus* L., *Phaseolus vulgaris, Trigonella foenum graceum* L.	7
24	Partulacaceae	1 species out of 51 species of plants	*Partulaca oleracea* L.	1
25	Solanaceae	2 species out of 51 species of plants	*Solanum tuberosum* L., *Capsicum annum* L.	2
26	Tiliaceae	2 species out of 51 species of plants	*Chorchorus olitorius* L., *Chorchorus olitorius* L.	2
27	Urticaceae	1 species out of 51 species of plants	*Ficus religiosa* L.	1



Daucus carota., Momordica charantia., Moringa pterygosperma Lam., *Raphanus sativus* L., *Solanum tuberosum* L.

5. **Stem (** species out of 51 species of plants**)**

Amaranthus spinosus L., *Amaranthus tricolour* L., *Amaranthus viridis* L., *Bauhinia purpurea,*

6. **Flowers or inflorescence (4** species out of 51 species of plants**)**

Bauhinia purpurea ., Brassica oleracea botrytis L., *Leucas cephalotes* Spreng., *Moringa pterygosperma* Lam.

7.Whole plant (2 species out of 51 species of plants)*Boerhaavia diffusa* L *Partulaca oleracea* L

8. Bark or sap(5 species out of 51 species of plants)

Bauhinia purpurea, Cordia myxa Roxb., *Ficus religiosa* L., *Moringa pterygosperma* Lam. *Shorea robusta.*

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