



## GREEN LEAFY VEGETABLES USED BY SEVEN TRIBES OF ODISHA, INDIA

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### Abstract

The study was conducted on seven tribal communities namely Bathui, Binjhal, Gond Oraon, Sabara, Saura and Santal to assess the diversity of plant species consumed as green leafy vegetables (GLVs). The data was collected by randomly selecting the students belonging to these ethnic groups studying in Kalinga Institute of Social Sciences (KISS) University, Bhubaneswar. Documentation of 48 plant species belonging to 38 genus and 26 families was done with their botanical name and vernacular names in seven tribal languages. The dominated families are Amaranthaceae (8) followed by Fabaceae (5), both Brassicaceae and Cucurbitaceae (4) and Caesalpiniaceae (3) (Table 2, Fig. 1). Most of the green leafy vegetables used by the seven tribes were herbs (63%), followed by climber (25%), Shrubs (8%) and 4% trees (Fig.2). These wild leafy vegetable plant species are rich in vitamins, fiber content and minerals and play an important role in finding a solution towards nutritional supplements associated with different ailments. Few species of wild green leafy vegetables are documented for the first time to be consumed by few tribes. The work will surely play as a valuable source and serve as a repository in conserving the seven tribal languages for these 48 green leafy vegetables.

**Keywords:** green leafy vegetables, nutritional supplements, tribal communities, vernacular names

### Introduction

Green leafy vegetables are the leaves obtained from a wide range of plants which are edible. These leafy greens are used as source of food and are known for their rich source of ascorbic acid, carotene, nutrients, minerals and dietary fibers contents required for maintaining human health. The plant food resources contain phytochemicals which have health benefits including glycemic control, stimulation of immune system or antioxidant activity (Behuhan and Ranogajee, 2010; Singh Kumar, 2012). Over 53 million tribal people in India belong to 550 communities of 227 ethnic groups and they rely on a wide variety of plant resources to meet the food requirements (FAO, 2004; Balemie and Kebebew, 2006; Bharucha and Pretty, 2010). The tribal people collect various species of edible weeds from their agricultural fields and forest areas and stored after drying to use in rainy season. The consumption varies from locality to locality and also depends on their availability. Because of rapid urbanization, documentation of leafy vegetables used by the tribes of Odisha is needed to restore the information. Green leafy vegetables (GLF) are important diet of human beings including tribal communities and are the important part of their daily diet. Leafy greens are the cheapest vegetables because of very low production cost with high yield and considered as the 'poor man's vegetables'. Odisha is one of the most diversity rich states of India because of its geographic and climatic conditions and plays a significant role in food and nutritional security of the tribal communities ((Mishra *et al.*, 2008; Singh, 2012). Green leafy vegetables are richest source for the nutritional value such as iron, vitamin C as well as hold an important place in balanced diets that helps to promote health and respond to disease (FAO, 2004). From the ancient time it is known as most rich sources of protein, vitamins and minerals (Aletor *et al.*, 2002). It was also revealed that green leafy vegetables are primary sources of lutein and zeaxanthine (Burney *et al.*, 2004; Singh *et al.*, 2014) which are major compounds for protection from eye diseases and also reported to manage age related cataract. Leafy vegetables are known to contain antioxidants in neutralizing free radicals. Till date studies on leafy vegetables of different tribal communities are not

documented. The present study was performed to document various wild edible green leafy vegetables consumed by seven tribes of Odisha. This study will help to promote the use and conservation of less known leafy vegetables, to identify the most preferred species by the tribe and to find out the similarities or variations in the ethnic groups.

### Materials and Methods

Data from was collected from the tribal students of Kalinga Institute of Social Sciences (KISS) University with participatory methods. These students are the inhabitants of seven districts of Odisha namely Bolangir, Baleswar, Cuttack, Gajapati, Kalahandi, Mayurbhanj, and Sundargarh.

The data were collected from the students belonging to seven tribal communities' namely Bathudi, Binjhal, Gond, Oraon, Sabar, Saura and Santal using personal interview schedule and documentation of some wild leafy vegetables was prepared during 2016-2017. A number of specific questions were asked and recorded to generate tables. The names of leafy vegetables in seven tribal languages were also recorded. Leafy species were identified by reference of local floras (Hains, 1925; Saxena and Brahmam, 1994-96). The leafy vegetables were also compared with their therapeutical, medicinal and nutritional values.

### Results

Documentation of wild edible plants is important for enhancing the understanding of indigenous knowledge system. A total of 48 green leafy vegetables (GLF) species belongs to 26 families were documented which was used by seven tribes of Odisha (Table 1). The dominated families are Amaranthaceae (8) followed by Fabaceae (5), both Brassicaceae and Cucurbitaceae (4) and Caesalpiniaceae (3) (Table 2, Fig. 1). Most of the green leafy vegetables used by the seven tribes were herbs (63%), followed by climber (25%), Shrubs (8%) and 4% trees (Fig.2). Two leafy vegetable species from Convulvulaceae, Lamiaceae and Marsileaceae family were recorded. One species each from the rest 18 families is reported to be consumed by these tribes. Despite the diversity of the species, they were found to be consumed in the same manner. Some of the leafy

vegetable species are known to consume by all these seven ethnospecific and is consumed by very few communities. tribal communities and few are found to be very

**Table 1 :** Green Leafy Vegetables (GLV) and their common names

Sl. No	Name in Odia	Common Name	Botanical Name	Family
1.	Aalu saga	Potato greens	<i>Solanum tuberosum</i> L.	Solanaceae
2.	Agasti saga	West Indian Pea/White Dragon tree	<i>Sesbania grandiflora</i> (L.)Pers.	Fabaceae
3.	Ambiliti saga	Common Yellow Oxalis	<i>Oxalis corniculata</i> L.	Oxalidaceae
4.	Balubaluka saga/Laghulunika saga	Common Pursulane / Pigweed	<i>Portulaca oleracea</i> L.	Portulacaceae
5.	Barada saga	Mountain Ebony/Geranium tree/Cow's Paw tree	<i>Bauhinia varegata</i> L.	Caesalpinaceae
6.	Bathua saga	Lambs Quarters/Goose foot/ Fat hen	<i>Chenopodium album</i> L.	Chenopodiaceae
7.	Chakhunda/Chhota Chakhunda/Sana Chakhunda	Pot cassia	<i>Cassia tora</i> L.	Caesalpinaceae
8.	Chana saga	Grass pea/Blue Sweet Pea	<i>Lathyrus sativus</i> L.	Fabaceae
9.	Dhania saga	Coriander	<i>Coriandrum sativum</i> L.	Apiaceae
10.	Gayasa saga	Common Leucas	<i>Leucas aspera</i> L.	Lamiaceae
11.	Jhudanga patra saga/ Burburi saga	Cow Pea greens/ Rope Bean	<i>Vigna unguiculata</i> (L.) Wap.	Fabaceae
12.	Kakharu saga	Pumpkin	<i>Cucurbita maxima</i> Duch.ex Lam.	Cucurbitaceae
13.	Kalama saga	Water Spinach	<i>Ipomea aquatica</i> Forssk.	Convolvulaceae
14.	Kalara saga	Bitter Gourd	<i>Momordica charantia</i> L.	Cucurbitaceae
15.	Kalikati Khada/ Bilati Khada	Leafy Amaranth/Spleen Amaranth	<i>Amaranthus caudatus</i> L.	Amaranthaceae
16.	Kanasiri saga	Bengal Day Flower/Tropical Spider Wort	<i>Commelina benghalensis</i> L.	Commelinaceae
17.	Kandamula patra	Sweet Potato	<i>Ipomea batatas</i> (L.) Lam.	Convolvulaceae
18.	Kanta leutia	Spiny Amaranth	<i>Amaranthus spinosus</i> L.	Amaranthaceae
19.	Khada saga (lal khada)	Edible Amaranth/Red Amaranth	<i>Amaranthus cruentus</i> L.	Amaranthaceae
20.	Khata palanga/khata kaunnria/ Lahanga saga	Jamaican Sorrel/Red Sorrel/Roselle	<i>Hibiscus sabdariffa</i> L.	Malvaceae
21.	Khuduri Leutia saga/ChadeiGodi saga	Slender Amaranth/Green Amaranth	<i>Amaranthus viridis</i> L.	Amaranthaceae
22.	Kosala saga /Nali Kosala	Red Goose Foot/Red Amaranth	<i>Amaranthus blitum</i> subsp. <i>oleraceus</i> (L.) Costea	Amaranthaceae
23.	Kobi saga/bandha Kobi saga	Cabbage	<i>Brassica oleracea</i> L. var. <i>capitata</i> L.	Brassicaceae
24.	Kunduri saga	Scarlet Gourd/Little gourd/Ivy gourd	<i>Coccinia grandis</i> (L.) Voigt	Cucurbitaceae
25.	Lau patra saga	Bottle Gourd/Long melon	<i>Lagenaria siceraria</i> (Molina) Standley	Cucurbitaceae
26.	Leutia saga/Champa leutia/Kani leutia	Mediterranean Amaranth	<i>Amaranthus graecizans</i> L.	Amaranthaceae
27.	Madaranga	Dwarf Copper Leaf/Sessile Joyweed	<i>Alternanthera sessilis</i> (L.) R.Br.ex Dc	Amaranthaceae
28.	Mati alu saga/Khamba alu saga	Great Yam/Asiatic Yam	<i>Dioscorea alata</i> L.	Dioscoreaceae
29.	Methi saga	Fenugreek	<i>Teigonella foenum-graecum</i> L.	Fabaceae
30.	Moti/Muthi saga	Common Nutweed/Small Nutweed	<i>Polygonum plebeium</i> R.Br.	Polygonaceae
31.	Mula saga	Radish	<i>Raphanus sativus</i> L.	Brassicaceae
32.	Nail Kanchan saga	Purple Orchid /Butterfly tree/Camel's Foot tree	<i>Bauhinia purpurea</i> L.	Caesalpinaceae
33.	Nalita saga/madhura nalita/Kaunnria/Jhota	Jute/Jute mallow/Jew's mallow	<i>Corchorus oliatorious</i> L.	Tiliaceae
34.	Nimba saga	Neem	<i>Azdiracta indica</i> L.	Meliaceae
35.	Palanga saga	Spinach	<i>Spinacia oleracea</i> L.	Amaranthaceae
36.	Prasaruni saga	Stink Vine/Stunk Vine	<i>Paederia foetida</i> L.	Rubiaceae
37.	Phula kobi patra saga	Cauliflower greens	<i>Brassica oleracea</i> L. var. <i>botrytis</i> L.	Brassicaceae
38.	Pirika saga/Chotta Sunsunia	Dwarf Water Colver/Pepper Wort	<i>Marsilea minuta</i> L.	Marsileaceae
39.	Piaja Sandha	Spring Onion/ Salad Onion/Green Onion	<i>Allium cepa</i> L.	Amaryllidaceae
40.	Pita Saga	Slender Carpet Weed	<i>Mollugo oppositifolia</i> L.	Molluginaceae
41.	Podina patra	Mint/Field Mint	<i>Mentha spicata</i> L.	Lamiaceae
42.	Poi saga	Malabar Spinach/Vine Spinach/Climbing Spinach	<i>Basella alba</i> L.	Basellaceae
43.	Puruni saga	Red Spiderling /Spreading Hogweed	<i>Boerhavia diffusa</i> L.	Nyctaginaceae
44.	Sajana saga	Drum stick greens	<i>Moringa oleifera</i> Lam.	Moringaceae
45.	Saru saga	Taro	<i>Colocasia esculenta</i> (L.) Schott	Araceae
46.	Sorisa saga	Mustard greens	<i>Brassica napus</i> L.	Brassicaceae
47.	Sunsunia saga	European Water Clover/Four Leaf Clover	<i>Marsilea quadrifolia</i> L.	Marsileaceae
48.	Simba Patra	Lima Bean/Butter Bean/Sugar Bean	<i>Phaseolus lunatus</i> L.	Fabaceae

Table 3 represented the documented data in relation with their languages along with Odia name and botanical names of the leafy vegetable species. From analyzing the data represented in Table 3, it was noticed that there is a similarity of languages in between Bathudi and Sabara tribe and also in between Binjhal and Gond tribe.

Though many studies reported there are no differences between Sabara and Saura tribes and they are same but in this study by direct discussion with the educated tribal students it was noticed that both the tribes are different not only by languages but also by their cultures too.

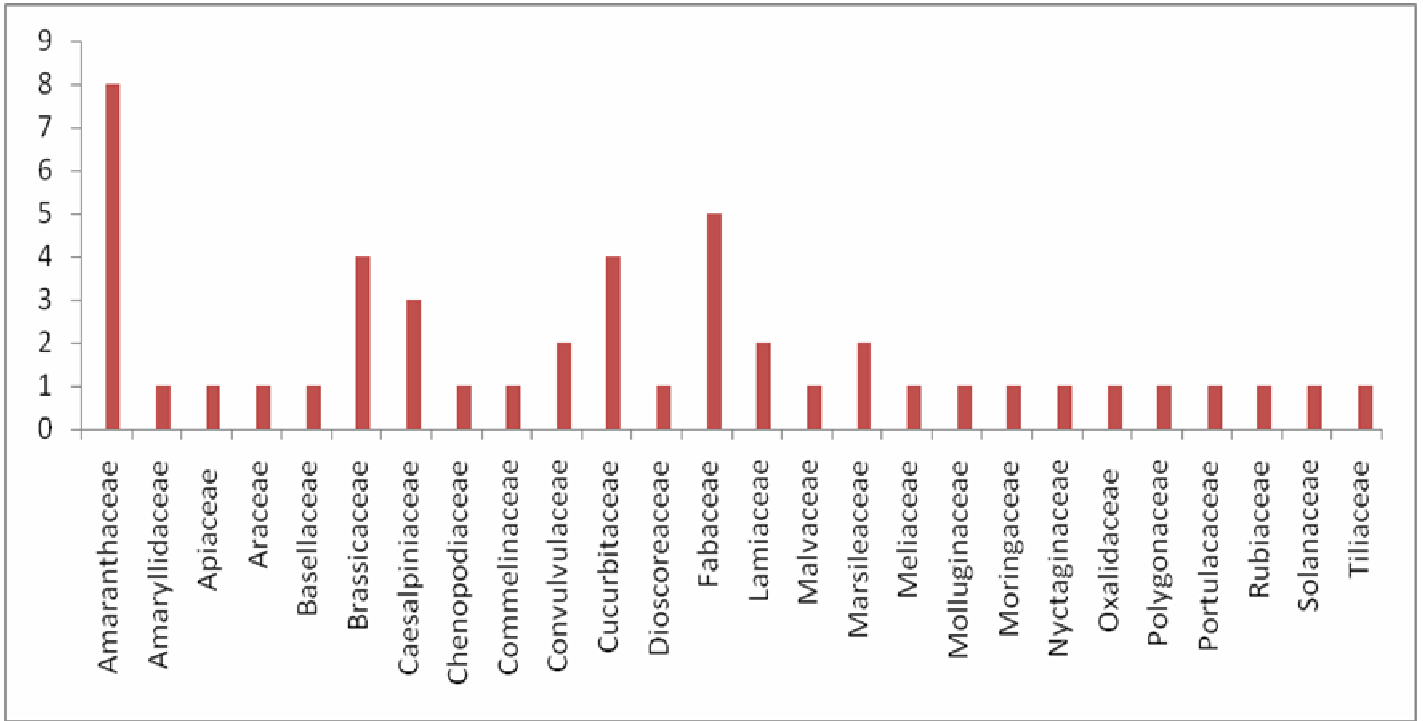


Fig. 1 : Distribution of leafy vegetable species belonging to different families

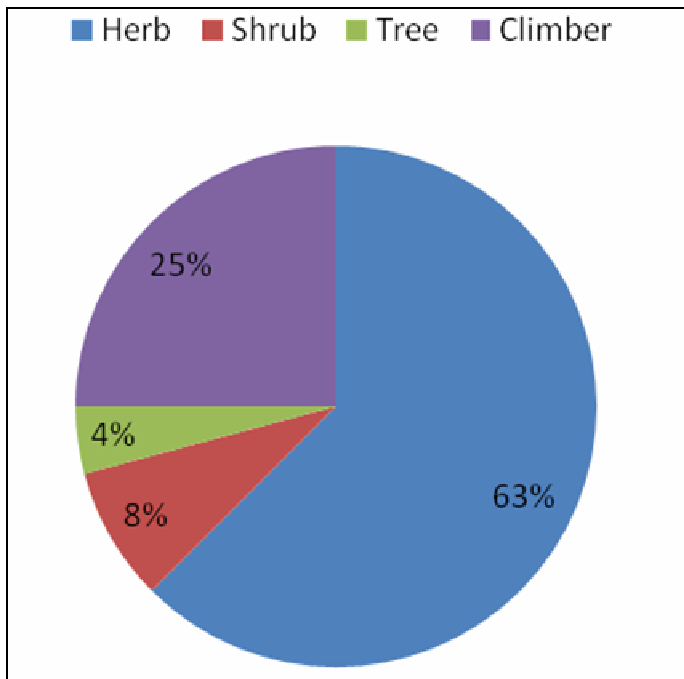


Fig. 2 : Diversity of green leafy vegetables

Table 2 : Families wise distribution of wild green leafy vegetables

Sl.No.	Family	No. of GLF species/Family
1.	Amaranthaceae	08
2.	Amaryllidaceae	01
3.	Apiaceae	01
4.	Araceae	01
5.	Basellaceae	01
6.	Brassicaceae	04
7.	Caesalpinaceae	03
8.	Chenopodiaceae	01
9.	Commelinaceae	01
10.	Convulvaceae	02
11.	Cucurbitaceae	04
12.	Dioscoreaceae	01
13.	Fabaceae	05
14.	Lamiaceae	02
15.	Malvaceae	01
16.	Marsileaceae	02
17.	Meliaceae	01
18.	Molluginaceae	01
19.	Moringaceae	01
20.	Nyctaginaceae	01
21.	Oxalidaceae	01
22.	Polygonaceae	01
23.	Portulacaceae	01
24.	Rubiaceae	01
25.	Solanaceae	01
26.	Tiliaceae	01

**Table 3 :** Some wild edible green leafy vegetables (GLV) with different tribal names

Sl. No	Name in Odia	Botanical Name	Tribal Names of GLF						
			Bathudi	Binjhal	Gond	Oraon	Sabara	Saura	Santal
1.	Aalu saga	<i>Solanum tuberosum</i> L.	Aalu patar	-	-	-	Aalu patara	-	-
2.	Agasti saga	<i>Sesbania grandiflora</i> (L.) Pers.	-	Agasti munga	Agasti munga	Jinor adkha	-	-	-
3.	Ambiliti saga	<i>Oxalis corniculata</i> L.	Ambiliti saga	Khata sunsunia sag	Khata sunsunia sag	Amat adkha	Ambiliti saga	Sarani uaab	Jaja alah
4.	Balubaluka saga/Laghulunika saga	<i>Portulaca oleracea</i> L.	Balubaluka saga	Barmi sag	Barmi sag	-	Balubaluka saga	Guyul lang uaab	Balubaluka alah
5.	Barada saga	<i>Bauhinia varegata</i> L.	Dala saga	Kuler sag	Kuler sag	Koinar adhka	Barada saga	Baradao uaab	Sinj alah
6.	Bathua saga	<i>Chenopodium album</i> L.	Bathua saga	Bathua sag	Bathua sag	Bathua adhka	Bathua saga	Bathua uaab	Bathua alah
7.	Chakhunda/Chhota Chakhunda/Sana Chakhunda	<i>Cassia tora</i> L.	Chakhunda saga	Chakda sag	Chakuda sag	Chakunda adkha	-	Surseng uaab	Vedwa alah
8.	Chana saga	<i>Lathyrus sativus</i> L.	Chana saga	Chana khudia sag	Khadia chnaa sag	Chana adhka	Chana saga	Chana uaab	Chana alah
9.	Dhania saga	<i>Coriandrum sativum</i> L.	Dhania saga	Dhania patar	Dhania patar	Dhania adhka	Dhania saga	Dhania saga	Dhania sakam
10.	Gayasa saga	<i>Leucas aspera</i> L.	-	Gathia gubi sag	Kandul gubi sag	Gamaa adkha	Gaisha/Gaichha saga	Araanda uaab	Sagay alah
11.	Jhudanga patra saga, Burburi saga	<i>Vigna unguiculata</i> (L.) Wap.	Nalika saga	-	-	-	-	-	-
12.	Kakharu saga	<i>Cucurbita maxima</i> Duch.ex Lam.	Kakharu saga	Maakhan sag	Maakhan sag	Kanhanda adhka	Kakharu saga	Kakharu uaab	Kanhanda alah
13.	Kalama saga	<i>Ipomea aquatica</i> Forssk.	Kalama saga	Kalmo sag	Kalmo sag	Kalmi adkha	Kalama saga	Kalama uaab	Kanda sag
14.	Kalara saga	<i>Momordica charantia</i> L.	Kalara saga	Karla sag	Karla sag	Karla adhka	Kalara saga	Karal uaab	Karla alah
15.	Kalikati Khada/Bilati Khada	<i>Amaranthus caudatus</i> L.	Marshi khada	Ras khada sag	Ras khada sag	Bhaji adkha	Bilati khada saga	Sanna yaga uaab	Marshi khada
16.	Kanasiri saga	<i>Commelina benghalensis</i> L.	Kanasila saga	Kena sag	Kena sag	Kena adkha	Kena saga	Sidaj uaab	Reta alah
17.	Kandamula patra	<i>Ipomea batatas</i> (L.) Lam.	-	Kanda sag	Kanda sag	Kaanda adkhaa	-	Geny gayal	Mula alah
18.	Kanta leutia	<i>Amaranthus spinosus</i> L.	Kanta leutia	Kanta bhaji sag	Kanta bhaji sag	Kanta bhaji sag	Kanta leutia	Kanta leutia uaab	Janum alah
19.	Khada saga (lal khada)	<i>Amaranthus cruentus</i> L.	Marshi saga	Khada sag	Khada saga	-	Khada saga	-	Marshi khada
20.	Khata palanga/khata kaunnria/ Lahanga saga	<i>Hibiscus sabdarriffa</i> L.	Taka saga	Kanharia sag	Kanharia sag	Dhepa/Kudrum	Lahanga saga	Susun uaab	Kaunnria alah
21.	Khuduri Leutia saga/Chadei Godi saga	<i>Amaranthus viridis</i> L.	Khuduri Leutia	Bhaji sag	Musakani sag	Khudru bhaji	Khuduri Leutia	Aneng uaab	Gandheri alah
22.	Kosala saga /Nali Kosala	<i>Amaranthus blitum</i> subsp. <i>oleraceus</i> (L.) Costea	Kosala saga	Kosala sag	Bhaji sag	Kosla adkha	Kosala saga	Koslu uaab	Kosla alah
23.	Kobi saga/bandha Kobi saga	<i>Brassica oleracea</i> L. var. <i>capitata</i> L.	Bandha kobi saga	Bandha kubi sag	Bandha kubi saga	Bandha kobi adkha	Bandha kobi saga	Govi uaab	Potum kobi alah
24.	Kunduri saga	<i>Coccinia grandis</i> (L.) Voigt	Kunduri saga	Kundru sag	Kunduru sag	-	Kunduri saga	Kundru uaab	Kundri alah
25.	Lau patra saga	<i>Lagenaria siceraria</i> (Molina) Standley	Lau patara	Lau sag	Lau sag	Lau adkha	Lau saga	Lau uaab	Hatha alah
26.	Leutia saga/Champa leutia/Kani leutia	<i>Amaranthus graecizans</i> L.	Leutia saga	Chaka bhaji	Chaka bhaji	Kani bhaji	Leutia saga	Kharba uaab	Sasal alah
27.	Madaranga	<i>Alternanthera sessilis</i> (L.) R.Br.ex Dc	Madaranga saga	Gundru sag	Menranga sag	Dali adkha	Madaranga saga	Saridi uaab	Gurundu alah

28.	Mati alu saga/Khamba alu saga	<i>Dioscorea alata</i> L.	Ghara alu saga	Bhat kanda	Bhat kanda	Aru adkha	Khamba alu saga	Khuma uaab	Khamalu alah
29.	Methi saga	<i>Teigonella foenum-graecum</i> L.	Methi saga	Methi sag	Methi sag	Methi adkha	Methi saga	Methi uaab	Methi alah
30.	Moti/Muthi saga	<i>Polygonum plebeium</i> R.Br.	Muthi saga	Chiti sag	Chati sag	Chimti adkha	Muthi saga	Silaj aab	Muthi alah
31.	Mula saga	<i>Raphnus sativus</i> L.	Mula saga	Mula sag	Mula sag	Murei adkha	Mula saga	Mula uaab	Mula alah
32.	Nail Kanchan saga	<i>Bauhinia purpurea</i> L.	Dala saga	Kuthel sag	Kuthul sag	Koemar adkha	Rakta Barada saga	-	Singh alah
33.	Nalita saga/Kaunria/Jhota	<i>Corchorus capsularis</i> L.	-	Nalita sag	Nalta sag	Sanai adkha	Nalita saga	Manna uaab	Nalcha alah
34.	Nimba saga	<i>Azdiracta indica</i> L.	Nima pita	Nim sag	Nim sag	Nim adkjha	Nimba saga	-	Nim alah
35.	Palanga saga	<i>Spinacia oleracea</i> L.	Palanga saga	Palanga sag	Palang sag	Palak adkha	Palanga saga	Palang uaab	Palan alah
36.	Prasaruni saga	<i>Paederia foetida</i> L.	Gandhali patra	Bheder sag	Bhadri sag	-	Pasaruni patar	Lam lamla	Pursuni alah
37.	Phula kobi patra saga	<i>Brassica oleracea</i> L. var. <i>botrytis</i> L.	Phula kobi saga	Phula kobi sag	Phula kobi sag	Phul kobi adkha	Phula kobi saga	Tharba kobi aab	Phula kobi alah
38.	Pirika saga/Chotta Sunsunia	<i>Marsilea minuta</i> L.	Sunsunia saga	Chhota Sunsunia sag	Chhota Sunsuni sag	Sunsunia adkha	Sunsunia saga	Sunsunia uaab	Sunsunia alah
39.	Piaja Sandha	<i>Allium cepa</i> L.	Piaja patar	Uli sag	Uli sag	Piaj adkha	Sandha saga	Aana suda	Piaj alah
40.	Pita Saga	<i>Mollugo oppositifolia</i> L.	Pita gamaa	Pita sag	Pita sag	Tita adkha	Pita Saga	Asang uaab	Halhat alah
41.	Podina patra	<i>Mentha spicata</i> L.	Pudina	Kalaa dahara patar	Pudina	Pudina adkha	Pudina	Pudina uaab	Pudunu sakam
42.	Poi saga	<i>Basella alba</i> L.	Poi saga	Puin sag	Puin sag	Poi adkha	Poi saga	Andeng uaab	Purai alah
43.	Puruni saga	<i>Boerrhavia diffusa</i> L.	Puruni saga	Bheder sag	Bhadri sag	-	Parasuni patra	Lamlam aab	Pursuni alah
44.	Sajana saga	<i>Moringa oleifera</i> Lam.	Sajana saga	Munga sag	Munga sag	Munga adkha	Sajana saga	Sajana uaab	Munga alah
45.	Saru saga	<i>Colocasia esculenta</i> (L.) Schott	Saru saga	Saru sag	Saru patar	Pechki adkha	Saru saga	Saru uaab	Saru alah
46.	Sorisa saga	<i>Brassica napus</i> L.	Sorisa saga	Sursa sag	Surso sag	Lotni adkha	Sorisa saga	Sorish uaab	Tuli alah
47.	Sunsunia saga	<i>Marsilea quadrifolia</i> L.	Sunsunia saga	Sunsunia sag	Sunsunia sag	Sunsunia adkha	Sunsunia saga	Sunsunia uaab	Chatam alah
48.	Simba Patra	<i>Phaseolus lunatus</i> L.	-	-	-	Sembi adkha	-	-	-

'-': Indicates the species is not consumed by the tribe

## Discussion

The data depicted in Table 3 revealed that green leafy vegetables (GLF) are called as saga by bathudi and sabara tribes; sag by Binjhal and Gond tribes; adkha by Oraon tribe; uaab/aab by Saura tribe and alah by Santal tribe. From this information it is clear that both Sabara and Saura tribes are not same. Nimba saga is not taken by Saura tribe because of their emotions and belief associated with Lord Jagannath as the body of the deity "Daru Bigrha" is made from this plant. It was also observed that Simba patra (*Phaseolus lunatus* L.) is consumed by Oraon tribe as leafy vegetables and other tribes do not consume the leaves. It was also noticed that leaves of *Solanum tuberosum* L (Aalu saga) and *Vigna unguiculata* (Jhudanga patra) is found to be consumed by Bathudi tribes only. This study depicted that the degree of consumption depends upon their eating habits which was also coincided with the literature data (Dansu *et al.*, 2008). One important thing came in to discussion that both the Sabara and Saura students claim that they are not same and belong to different ethnic groups. This claim is also justified on the basis of variation in their languages cited in Table 3 which deviates from the existing data. But according to literature

data, the Sauras are called by various names like Sabara, Saur and Sora. Their language is an uncultivated and there is no standardization and varies in between individual and also between region to region (Patel, 2005).

## Conclusion

There is a chance of ignorance and extinction of their own languages because of modern education system therefore; this work will play as a valuable source for future tribal generation in restoring and identifying the wild green leafy vegetables. The study revealed that similarities between ethnic groups in terms of species consumed are based on cultural linkages and also shared geographical space. But further researches to be done on nutritional content and toxicological analyses of the species in relation with soil analyses, domestication of some wild species, appropriate agronomic practices for maximum production of the desired wild species and morphological evaluation of polymorphic species with its nutritional compositions. Based on the efficiency some of the species can be cultivated in commercial productions to improve their economy and thereby will minimize the scarcity of rare leafy greens in tribal areas which will help in regeneration of unutilized land.

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## References

- Dansi, A.; Adjatin, A.; Adoukonou-Sagbadja, H.; Falade, V.; Yedomonhan, H.; Odou, D. and Dossou, B. (2008). Traditional leafy vegetables and their use in the Benin Republic, *Genet Resource Crop Evolution*, 55: 1239-1256.
- Aletor, O.; Oshodi, A. and Ipinmoroti, A.K. (2002) Chemical composition of common leafy vegetables and functional properties of their leaf protein concentrates. *Journal of Food Chemistry*, 78: 63-68.
- Balemie, K. and Kebebew, F. (2006) Ethnobotanical study of wild edible plants in Derashe and Kucha districts, South Ethiopia. *Journal of Ethnomed*, 2: 53-61.
- Behuhan, S. and Ranogajee, A. (2010). Chemical composition and nonvolatile components of crotil edible mushrooms, *Food Chemistry*, 124: 8076-8082.
- Bharucha Z. and Pretty (2010). The roles and values of wild foods in agricultural system. *Phil. B*. 365: 2913-2926.
- Burney, M.C.; Griffin, R.P.H.; Paul, A.A. and Greenberg, D.C. (2004). The nutritional composition of African Wild food plant plants: for compilation to utilization. *Journal of Food Composition and Analysis*. 17: 277-289.
- [http://magazines.odisha.gov.in/Orissareview/jan2005/english/Pdf/Souras\\_Paintings.pdf](http://magazines.odisha.gov.in/Orissareview/jan2005/english/Pdf/Souras_Paintings.pdf) Patel, C. B (2005)
- Food and Agricultural Organization of the United State Nations FAO (2004) The state of food insecurity in the world. Monitoring the progress towards the world food summit 2nd Millennium developmental goals Ann Rep Rome.
- Hains, H.H. (1925) *The Botany of Bihar and Orissa* BSI, Howrah 1-4.
- Mishra, S.; Maikuri, R.K.; Kala, C.P.; Rao, K.S. and Saxena, K.G. (2008). Wild leafy vegetables: a study of their subsistence deictic support to in habitants Nanda Devi Biosphere Reserve Forest, India. *Journal of Ethnobiology and Ethnomedicine*, 4: 15.
- Saxena, H.O.; Brahman, M. *The Flora of Orissa* (1994-96), Vol. 1-4. Bhubaneswar. Regional Research Laboratory and Forest Development Corporation of Orissa; 1994.
- Singh, G. and Kumar, J. (2014). Studies on indigenous traditional of aquatic and marshy wild edible plants used by the Munda tribes of Khunti, Jharkhand, India, *International Journal of Bioaaay*, 1738-1743.
- Singh, K.G. (2012). Traditional knowledge of some less known wild edible plants used among Munda tribes of Jharkhand, *The Ecoscan*, 6(3-4): 153-155.