



MEDICINAL PROPERTIES OF EDIBLE WEEDS OF CROP FIELDS AND WILD PLANTS EATEN BY ORAON TRIBALS OF LATEHAR DISTRICT, JHARKHAND

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ABSTRACT

Latehar district of the state of Jharkhand is inhabited by several tribal groups which constitute 40% of the total population of the district. The Oraons are one of major tribal communities in Latehar dwelling in hills and valleys of the district. They depend on plants or plant products to maintain their livelihood. Ethnobotanical field studies reveal that the Oraons of the district have considerable amount of traditional knowledge of edible weeds from the crop fields and edible wild plants from the forests and hills. During the field study, 101 plant species belonging to 63 genera under 43 families have been recorded which are commonly used by the *Oraon* community as leafy vegetables. Further study reveals that the edible weeds and the wild plants consist of several medicinal properties.

Keywords: Edible weeds, medicinal weeds, wild plants, *Oraon* tribes, Latehar, Jharkhand

INTRODUCTION

Latehar district lies in North-western part of the state of Jharkhand between 23°75'North latitude to 84°50'East latitude. The total area of the district is 3671 sqkm carved out of Palamu district in 2001. The district is surrounded by Chatra, Palamu and Garwa districts of Jharkhand in the north eastern part. The southern part of the district is surrounded by Lohardaga and Gumla districts of Jharkhand. The western part of Latehar district shares the boundary with the state of Chatthisgarh. Latehar is predominantly a tribal district with almost 40% of the population belonging to the Scheduled tribes. The major tribal groups of the district of Latehar are *Oraons*, *Kherwars* and *Cheros*. The *Oraons*, in their own language (Kurukh) call themselves Kurukhar. Kurukh is closely allied with the Dravidian language spoken in the south of India. All authorities agree that they belong to Dravidian people who once lived in the hills and hill-caves of Southern India and immigrated to the plateau of Chota Nagpur (Roy, 1915). The Oraons claim the honour of having introduced the use of plough in agriculture in Chota Nagpur which they learnt in course of their wandering in South India (Roy, 1915). Either owing to over population or external pressure, the Oraons

moved forward from Southern to Northern India. According to their traditions, after many wanderings in Northern India and having passed through Nandagarh, Piprigarh and Hardinagar, they settled in Shahabad (now a district in Bihar) as agriculturalists and herdsmen. Driven thence by the predominant Cheros, the Oraons took shelter on the Rohtas plateau and having settled at length there, they were constrained to leave. From Rohtas, the Oraons went up the valley of the Koel and finally entered the Chota Nagpur plateau (Roy, 1915) of which Latehar District is one of the constituents. Roy observed that the Oraons largely fed on wild plants and locally brewed drink called *handia*. Now, they are found not only in Jharkhand but also in other states such as West Bengal, Assam, Orissa, Madhya Pradesh and Chattisgarh (Tirkey and Jain, 2006). This paper is a modest endeavour to document the remnant knowledge of the wild edible plants of the *Oraon* tribals and to study their medicinal properties. These plants constitute a major portion in their principal meal which consists of *Bhat* i.e. boiled rice with boiled leafy vegetables i.e. *sag* from their surroundings. They largely depend on wild

leafy vegetables, flowers and fruits which they collect from their crop fields and forest areas.

MATERIALS AND METHODS

An extensive survey was undertaken in randomly chosen tribal villages of nine development blocks of Latehar district, namely Mahuadnr, Garu, Barwadih, Latehar, Chandwa, Balumath, Herhanj, Manika and Bariatu (Fig. 1). The women and the teenage girls of the tribal community were chosen as informants because it is their social duty to collect the leafy vegetables from the crop fields and the hills. Two categories of women were interviewed – first category were illiterate and dwelling in interior forests; second category were literate and living in and around nearby towns. This was done to get

standard local names of the weeds in two local languages i.e., *Kurukh* and *Sadri* given in Table 1. For authentication and proper identification of the edible weeds, the women were taken to the cropland areas in their village vicinity to disclose the plants in natural habitat. The plants were photographed and collected for voucher specimens. The collected were further verified and cross checked in different villages and among different groups of women. Voucher specimens were properly identified and deposited in the Rapinat Herbarium of St. Joseph's College, Tiruchirappalli, Tamilnadu, India. No medicinal properties of the plants were reported by the informants but only usage of the weeds as vegetables. The botanical names were crosschecked and medicinal properties were referred in the earlier published scientific literature sources.



Figure 1
Map showing location of Latehar District in Jharkhand, India

RESULTS

The study provides information on 101 weeds and wild plants used as vegetables by the *Oraon* tribals. The plant species come under 63 genera and 43 families. The leafy vegetables and tuberous plants include 98 angiosperms and 4 pteridophyte species. The edible parts such as tender shoots, leaves, young plants, tubers, fruits and seeds are consumed as vegetables with boiled rice. The mode of consumption is reported to be same for all the plants. The plant parts are collected seasonally and washed properly. They are cut into small pieces and fried in mustard oil with chilli, garlic, salt and onion

pieces. These edible weeds grow in the fields of *Rabi* and *Kharif* crops. The leafy vegetables from the forests are collected in summer when the trees and the shrubs bloom and bear leaves.

Enumeration of plants

The species have been arranged alphabetically in Table 1 with their local names (*Kurukh*, *Sadri*), botanical name, family, habit and season of availability. The *Kurukh* is the language of the *Oraon* tribes but they also speak *Sadri* which is a *franca lingua* in Jharkhand.

Table 1
Edible Weeds of Crop Fields and Edible Wild Plants of Latehar District, Jharkhand

S. N.	Local Names (Kurukh, Sadri)	Botanical Name	Family	Habit	Season of Availability
1	Aadar arxa, Bhaji sag	<i>Amaranthus viridis</i> Linn.	Amaranthaceae	Herb	Rainy & Winter
2	Accho aadar arxa, Kanta bhaji	<i>Amaranthus spinosus</i> Linn.	Amaranthaceae	Herb	Rainy & Winter
3	Accho Dhania, Kanta dhania	<i>Eryngium foetidum</i> Linn.	Apiaceae	Herb	Rainy & Winter
4	Addo arxa, Kena sag	<i>Commelina benghalensis</i> Linn.	Commelinaceae	Herb	Rainy
5	Addo tatxa arxa, Golgola sag	<i>Portulaca quadrifida</i> Linn.	Portulacaceae	Herb	Rainy & Winter
6	Bindo arxa, Nettho sag	<i>Medicago lupulina</i> Linn.	Fabaceae	Herb	Winter
7	Bindo arxa, Nettho sag	<i>Medicago polymorpha</i> Linn.	Fabaceae	Herb	Winter
8	Boda arxa, Boda sag	<i>Colocasia sp.</i>	Araceae	Herb	Rainy
9	Brahmi arxa, Brahmi sag	<i>Bacopa monnieri</i> Linn.	Scrophulariaceae	Herb	Rainy & Winter
10	Chakoda arxa, Chakod sag	<i>Cassia tora</i> Linn.	Caesalpiniaceae	Herb	Rainy
11	Chench arxa, Pat sag	<i>Corchorus capsularis</i> Linn.	Tiliaceae	Herb	Rainy
12	Chench koha, Pat sag	<i>Corchorus olitorius</i> Linn.	Tiliaceae	Herb	Rainy
13	Chirinji arxa, Chirinji sag	<i>Vicia hirsuta</i> Koch.	Papilionaceae	Herb	Winter
14	Chottor arxa, Kado sag	<i>Limnophila gratioloides</i> R.Br.	Scrophulariaceae	Herb	Rainy & Winter
15	Chottor arxa, Kado sag	<i>Limnophila rugosa</i> Roth.	Scrophulariaceae	Herb	Rainy & Winter
16	Dali arxa, Golgola sag	<i>Portulaca oleracea</i> Linn.	Portulacaceae	Herb	Rainy & Winter
17	Derango arxa, Mattha sag	<i>Antidesma diandrum</i> Roxb.	Phyllanthaceae	Shrub	Rainy & Winter
18	Dhaonro pump, Kachnar phul	<i>Bauhinia variegata</i> Linn.	Caesalpiniaceae	Tree	Summer
19	Dhela arxa, Dhela sag	<i>Melochia corchorifolia</i> Linn.	Sterculiaceae	Herb	Rainy
20	Dhoto pako, Ban angur	<i>Ampelocissus latifolia</i>	Vitaceae	Climber	Summer
21	Dhoto pako, Ban angur	<i>Vitis riparia</i> Michx.	Vitaceae	Climber	Summer
22	Guma arxa, Badi Guma	<i>Leucas aspera</i> Spreng.	Lamiaceae	Herb	Rainy
23	Gamhair pump, Gamhair	<i>Gmelina arborea</i> Roxb.	Verbenaceae	Tree	Spring
24	Guma arxa, Choti Guma	<i>Leucas cephalotes</i> Spreng.	Lamiaceae	Herb	Rainy
25	Gundru arxa, Gundri sag	<i>Alternanthera sessilis</i> Linn.	Amaranthaceae	Herb	Rainy
26	Injjo arxa, Kukri sag	<i>Diplazium esculentum</i> Retz.	Athyriaceae	Fern	Rainy
27	Kukri arxa, Kukri sag	<i>Dryopteris cochleata</i> Don.	Dryopteridaceae	Fern	Rainy
28	Jhilo arxa, Jhilo sag	<i>Vicia sativa</i> Linn.	Papilionaceae	Herb	Winter
29	Kari bhaji, Kari gendhari	<i>Digera alternifolia</i>	Amaranthaceae	Herb	Rainy
30	Karmi arxa, Kalmi sag	<i>Ipomoea aquatica</i> Forssk.	Convolvulaceae	Herb	Whole year
31	Katai arxa, Sarla sag	<i>Vangueria spinosa</i> Roxb.	Rubiaceae	Shrub	Winter
32	Kawoa arxa, Kawoa sag	<i>Rungia parviflora</i> Nees.	Acanthaceae	Herb	Whole year
33	Khapra arxa, Khapra sag	<i>Trianthema monogyna</i> Linn.	Aizoaceae	Herb	Winter
34	Khapra arxa, Khapra sag	<i>Trianthema portulacastrum</i> Linn.	Aizoaceae	Herb	Rainy
35	Khar arxa, Nadi sag	<i>Polygonum glabrum</i> Willd.	Polygonaceae	Herb	Rainy & Winter
36	Kharika arxa	<i>Spergula arvensis</i> Linn.	Caryophyllaceae	Herb	Winter
37	Kharra, Karil	<i>Bambusa bambos</i> Linn.	Poaceae	Grass	Rainy
38	Kharra, Karil	<i>Bambusa pallida</i> Munro.	Poaceae	Grass	Rainy
39	Kharra, Karil	<i>Bambusa tulda</i> Roxb.	Poaceae	Grass	Rainy
40	Khilbiri pump, Jirhul phul	<i>Indigofera pulchella</i> Roxb.	Leguminosae	Shrub	Spring
41	Khudi Aadar arxa, Khudi bhaji	<i>Amaranthus bilitum</i> Linn.	Amaranthaceae	Herb	Rainy & Winter
42	Kima arxa, Siliari sag	<i>Celosia argentea</i> Linn.	Amaranthaceae	Herb	Rainy
43	Kiss punji, Amboti sag	<i>Oxalis corniculata</i> Linn.	Geraniaceae	Herb	Rainy & Winter
44	Kokro jhumpa, Murgi jhumpa	<i>Galium lanceolatum</i> Torr.	Rubiaceae	Herb	Winter
45	Kokro pump, Kokro chundi	<i>Celosia cristata</i> Linn.	Amaranthaceae	Herb	Rainy
46	Komi arxa, Koinar sag	<i>Bauhinia purpurea</i> Linn.	Caesalpiniaceae	Tree	Summer
47	Koreya pump, Koreya phul	<i>Holarrhena antidysenterica</i> Linn.	Apocynaceae	Tree	Summer
48	Kundo arxa, Sunsunia sag	<i>Marsilea minuta</i> Linn.	Marsiliaceae	Herb	Rainy & Winter
49	Kundo arxa, Susni sag	<i>Marsilea quadrifolia</i> Linn.	Marsiliaceae	Herb	Rainy & Winter
50	Lawai arxa, Amad simad	<i>Cyphostemma auriculatum</i>	Vitaceae	Climber	Rainy & Winter
51	Ledra arxa, Chithra sag	<i>Gamochaeta pensylvanica</i> Willd.	Asteraceae	Herb	Rainy
52	Lendra arxa, Lopong sag	<i>Aerva lanata</i> Juss.	Amaranthaceae	Herb	Rainy & Winter
53	Madgi, Mahua	<i>Madhuca indica</i> Gmel.	Sapotaceae	Tree	Summer
54	Makka, Sakhu	<i>Shorea rubusta</i> Gaertn.	Dipterocarpaceae	Tree	Summer
55	Maricha arxa, Marchi sag	<i>Catharanthus pusillus</i> Murr.	Apocynaceae	Herb	Rainy
56	Mausi arxa, Mausi sag	<i>Pergularia daemia</i> Forssk.	Asclepiadaceae	Climber	Rainy
57	Mayna arxa, Maina sag	<i>Bidens pilosa</i> Linn.	Asteraceae	Herb	Rainy
58	Muchari aijo, Nadi muchari	<i>Limnophila spp.</i>	Scrophulariaceae	Herb	Rainy & Winter
59	Muchari arxa, Hirmica sag	<i>Limnophila conferta</i> Benth.	Scrophulariaceae	Herb	Whole year
60	Munga arxa, Munga sag	<i>Moringa oleifera</i> Lam.	Moringaceae	Tree	Whole year
61	Muxa arxa, Beng sag	<i>Centella asiatica</i> Linn.	Umbelliferae	Herb	Whole year
62	Nalkim arxa, Machali sag	<i>Jussiaea suffruticosa</i>	Onagraceae	Herb	Rainy
63	Nal Sirio, Hurruria sag	<i>Cleome viscosa</i> Linn.	Cleomaceae	Herb	Rainy & Winter
64	Nalkimro arxa, Machali sag	<i>Jussiaea repens</i> Linn.	Onagraceae	Herb	Rainy
65	Pako ansua, Makoi	<i>Solanum nigrum</i> Linn.	Solanaceae	Herb	Rainy & Winter
66	Pako bhijri, Kutumba	<i>Solanum torvum</i> Sw.	Solanaceae	Herb	Winter
67	Pako tipai, Chutia handi	<i>Physalis minima</i> Linn.	Solanaceae	Herb	Rainy
68	Pakri tussa, Peepal	<i>Ficus religiosa</i> Linn.	Moraceae	Tree	Summer
69	Pandru sirio, Hurrura	<i>Cleome gynandra</i> Linn.	Cleomaceae	Herb	Rainy
70	Parta bhetango, Kutuma	<i>Solanum indicum</i> Linn.	Solanaceae	Herb	Winter

71	Parta karela, Ban karela	<i>Momordica dioica</i> Roxb.	Cucurbitaceae	Climber	Rainy
72	Pecki arxa, Pecki sag	<i>Colocasia antiquorum</i> Linn.	Araceae	Herb	Rainy
73	Phutalgo tussa, Phutkal sag	<i>Ficus glabella</i> Blume	Moraceae	Tree	Summer
74	Pok arxa, Chimti sag	<i>Polygonum plebejum</i> R. Br.	Polygonaceae	Herb	Winter
75	Pucchu arxa, Bhatua sag	<i>Chenopodium album</i> Linn.	Chenopodiaceae	Herb	Rainy & Winter
76	Pudina, Pudina	<i>Mentha sativa</i> Linn.	Lamiaceae	Herb	Whole year
77	Puin arxa hara, Puin sag	<i>Basella alba</i> Linn.	Basellaceae	Climberr	Rainy & Winter
78	Puin arxa lal, Puin sag	<i>Basella alba</i> var. <i>rubra</i>	Basellaceae	Climber	Rainy
79	Sonarkhi pump, Bandarlauri	<i>Cassia fistula</i> Linn.	Fabaceae	Tree	Spring
80	Sowa arxa, Soya sag	<i>Anethum graveolens</i> Linn.	Apiaceae	Herb	Winter
81	Tena arxa	<i>Cyanotis axillaris</i> Roem.	Commelinaceae	Herb	Rainy
82	Thotha Sirio, Hurhuria sag	<i>Cleome monophylla</i> Linn.	Cleomaceae	Herb	Rainy & Winter
83	Tinpatia, Netho sag	<i>Oxalis latifolia</i>	Oxalidaceae	Herb	Winter
84	Tinpatia, Netho sag	<i>Oxalis Corymbosa</i>	Oxalidaceae	Herb	Winter
85	Tissa palak, Jungli palak	<i>Rumex dentatus</i> Linn.	Polygonaceae	Herb	Rainy
86	Tissa palak, Jungli palak	<i>Rumex maritimus</i> Linn.	Polygonaceae	Herb	Rainy
87	Tonka pudina, Danr pudina	<i>Sphaeranthus hirtus</i> Linn.	Asteraceae	Herb	Rainy & Winter
88	Unk arxa, Chirkanni sag	<i>Colocasia esculenta</i> Linn.	Araceae	Herb	Whole year
89	Xenso arxa, Lal Bhaji sag	<i>Amaranthus gangeticus</i> Linn.	Amaranthaceae	Herb	Rainy & Winter
90	Aru kanda	<i>Dioscorea alata</i> Linn.	Dioscoreaceae	Climber	Rainy
91	Ban Ole	<i>Amorphophallus sylvaticus</i> Roxb.	Araceae	Herb	Winter
92	Ban kundari	<i>Melothria heterophylla</i> Lour.	Cucurbitaceae	Climber	Rainy
93	Dang kanda	<i>Dioscorea sp.</i>	Dioscoreaceae	Climber	Winter
94	Duru kanda	<i>Dioscorea belophylla</i> Voigt.	Dioscoreaceae	Climber	Winter
95	Kesari kanda	<i>Scirpus grossus</i> Linn.	Cyperaceae	Herb	Summer
96	Kulu kanda	<i>Dioscorea daemona</i> Roxb.	Dioscoreaceae	Climber	Rainy
97	Gethia kanda	<i>Dioscorea bulbifera</i> Linn.	Dioscoreaceae	Climber	Rainy
98	Nakwa kanda	<i>Dioscorea pentaphylla</i> Linn.	Dioscoreaceae	Climber	Rainy
99	Patal Kohnda	<i>Pueraria tuberosa</i> Roxb.	Fabaceae	Climber	Winter
100	Pitharu kanda	<i>Dioscorea sp.</i>	Dioscoreaceae	Climber	Rainy
101	Sakhin kanda	<i>Dioscorea sp.</i>	Dioscoreaceae	Climber	Winter

The medicinal properties of the edible weeds from the crop fields and hill plants are given in Table 2 arranged alphabetically with botanical name / accession number, plant parts consumed, mode of consumption and medicinal properties. Acronym RHT means The Rapinat Herbarium, Tiruchirappalli.

Table 2
Medicinal Properties of Edible Weeds and Wild Plants of Latehar District, Jharkhand

Botanical Name/ Accession No.	Plant Parts Consumed	Mode of Consumption	Medicinal Properties
<i>Aerua lanata</i> Juss./ RHT66349	Tender leaves	Cooked as vegetable	Dysuria, Renal Calculi (Ediriweera, 2007; Jeeva et al. 2006)
<i>Alternanthera sessilis</i> Linn./ RHT66299	Tender shoot	Cooked as vegetable	Parkinsonism, eye diseases (Ediriweera, 2007), ophthalmic, detergent (Lal et al. 2012), chronic dysentery, malaria (Satapathy et al. 2012), hypertension, lactation, intestinal cramps and disorders (Manju et al. 2011)
<i>Amaranthus bilitum</i> Linn./ RHT66306	Tender shoot, leaves	Cooked as vegetable	Cooling, stomachic, emollient, biliary, haemorrhagic diathesis (Khare, 2007)
<i>Amaranthus gangeticus</i> Linn.	Tender shoot, Leaves	Cooked as vegetable	Blood pressure (Dhanam and Elayraj, 2014),menorrhagia, leucorrhoea, dysentery, diarrhoea, haemorrhagic colitis, cough, bronchitis (Khare, 2007)
<i>Amaranthus spinosus</i> Linn./ RHT66286	Young plant, Leaves	Cooked as vegetable	Obesity (Ediriweera, 2007), eczema or abscesses, dysuria(Satapathy et al. 2012), burns, wounds, inflammation, indigestion (Rajasab and Isaq, 2004), laxative, emollient, spasmolytic, diuretic (Khare, 2007)
<i>Amaranthus viridis</i> Linn./ RHT66285	Young plant, Leaves	Cooked as vegetable	Oedema (Ediriweera, 2007), diuretic, purgative (Rajasab and Isaq, 2004)
<i>Amorphophallus sylvaticus</i> Roxb.	Tuber	Cooked as vegetable	Piles, elephantiasis, rheumatic swellings (Khare, 2007), dysmenorrhea and sexual weakness.
<i>Ampelocissus latifolia/</i> RHT66271	Fruits	Cooked as vegetable	Anti inflammatory activity (Patel et al. 2013)
<i>Anethum graveolens</i> Linn./ RHT66334	Leaves	Cooked as vegetable	Disorders of gastrointestinal tract, kidney and urinary tract, spasms and sleep disorders (Khare, 2007), gastrointestinal disorders, anti-inflammatory, analgesic effects (Snafi, 2014)
<i>Antidesma diandrum</i> Roxb./ RHT66294	Tender leaves	Cooked as vegetable	Biliary complaints, blood dysentery, muscular pain (Kumari and Kumar, 2000)
<i>Bacopa monnieri</i> Linn.	Leaves	Cooked as vegetable	Brain tonic, fever (Jeeva et al. 2006), epilepsy (Satapathy et al. 2012), enhance memory (Bhattacharya and Borah, 2008), skin diseases, leprosy, epilepsy, eczema, asthma, diseases of nervous system (Manju et al. 2011)
<i>Bambusa bambos</i> Linn.	Young shoot	Cooked as vegetable	Dysmenorrhoea, ulcerations (Khare, 2007), expectorant, constipating, cardio tonic,haemostatic, aphrodisiac, diuretic (Das et al. 2012)
<i>Bambusa pallida</i> Munro.	Young shoot	Cooked as	Expectorant, pectoral, carminative, cooling, tonic, aphrodisiac

		vegetable	(Khare, 2007)
<i>Bambusa tulda</i> Roxb.	Young shoot	Cooked as vegetable	Debilitating diseases, urinary infections, chest diseases, cough, asthma (Khare, 2007) astringent, cooling, expectorant, constipating
<i>Basella alba</i> var. <i>rubra</i> / RHT66330	Leaves	Cooked as vegetable	Constipation, cures mouth ulcers, irregular periods, mild laxative ((Shruthi et al. 2012)
<i>Basella alba</i> Linn./ RHT66339	Leaves	Cooked as vegetable	Urinary disorders, source of Vitamin B & C (Rajasab and Isaq, 2004), laxative, antifungal, anticonvulsant, analgesic, anti-inflammatory, anemia, androgenic activities, hemorrhages, febrifuge, rubefacient (Shruthi et al. 2012)
<i>Bauhinia purpurea</i> Linn. / RHT66310	Tender leaves, flowers	Cooked as vegetable	Antigoiter, blood purifier (Khare, 2007) worm infection, cuts & wounds, antioxidant (Sahu et al. 2013), constipation (Pareek and Trivedi, 2011)
<i>Bauhinia variegata</i> Linn. / RHT66295	Flowers	Cooked as vegetable	Diarrhoea, dysentery, worm infestation, piles, tumours, haematuria, menorrhagia (Khare, 2007)
<i>Bidens pilosa</i> Linn. / RHT66340	Young plant	Cooked as vegetable	Skin diseases (Satapathy et al. 2012), inflammation, immunological disorders, digestive disorders, infectious diseases, anticancer, wounds (Bartolome et al. 2013)
<i>Cassia fistula</i> Linn. / RHT66231	Flowers	Cooked as vegetable	Chronic fever, anthelmintic, rheumatism, constipation (Lal and Singh, 2012; Pareek and Trivedi, 2011)
<i>Cassia tora</i> Linn. / RHT66223, 66290	Leaves	Cooked as vegetable	Cough, dermatitis (Ediriweera, 2007), ringworm, skin diseases, indigestion & stomach complaints, antioxidant (Lal et al. 2012; Sahu et al. 2013)
<i>Catharanthus pusillus</i> Murr.	Young plant	Cooked as vegetable	Oil preparation used for treating lumbago (Khare, 2007)
<i>Celosia argentea</i> Linn. / RHT66307	Young plant	Cooked as vegetable	Menorrhagia, blood-dysentery, antibacterial, antiscorbutic and cooling effect (Khare, 2007), postdelivery body ache, cures mouth sores (Satapathy et al. 2012)
<i>Celosia cristata</i> Linn.	Young plant	Cooked as vegetable	Painful micturition, antiulcer and gastro-protective effect, (Khare, 2007), antioxidant
<i>Centella asiatica</i> Linn. / RHT66322	Whole plant	Cooked as vegetable or chutney prepared	Increase memory power (Ediriweera, 2007; Jeeva et al. 2006), stomachic, constipation, liver tonic (Lal and Singh, 2012; Bhattacharya and Borah, 2008), gastric, acidity (Sinha et al. 2007), asthma, leprosy and psoriasis, hair growth (Satapathy et al. 2012)
<i>Chenopodium album</i> Linn. / RHT66332	Tender shoot, leaves	Cooked as vegetable	Leucoderma, anthelmintic (Lal and Singh, 2012; Satapathy et al. 2012), abdominal pain, gastric (Razzaq et al. 2013), seminal weakness, cardiac disorders, general debility (Jeeva et al. 2006)
<i>Cleome gynandra</i> Linn.	Young plant	Cooked as vegetable	Worm Infestation (Ediriweera, 2007), Anthelmintic, in ear diseases, pruritis and several other diseases like gastro intestinal disorders and gastrointestinal infections (Moharana et al. 2011)
<i>Cleome monophylla</i> Linn.	Young plant	Cooked as vegetable	Anti-inflammatory, antirheumatic, antidermatosis (Khare, 2007), bile enlargement (Kumari and Kumar, 2000)
<i>Cleome viscosa</i> Linn. / RHT66301	Young plant	Cooked as vegetable	Headache (Ediriweera, 2007), Swellings, stomachic, malaria (Lal and Singh, 2012), pimples and boils (Satapathy et al. 2012), wounds, ulcer, earache (Dhanam and Elayaraj, 2014)
<i>Colocasia antiquorum</i> Linn. / RHT66327	Leaves, tuber	Cooked as vegetable	Laxative, styptic, rubefacient, alopecia (Khare, 2007), leaves rich in vitamins and minerals (Manju et al. 2011)
<i>Colocasia esculenta</i> Linn. / RHT66289, 66338	Leaves	Cooked as vegetable	Styptic, stimulant (Lal and Singh, 2012), laxative, useful in congestion of portal system (Khare, 2007), leaves rich in vitamins and minerals (Manju et al. 2011)
<i>Commelina benghalensis</i> Linn. / RHT66284	Young plant	Cooked as vegetable	Emollient, laxative and demulcent, leprosy (Lal et al. 2012), suppurative sores, snake bite, swelling, burns, antioxidant (Sahu et al. 2013), Cancer, Ulcer, Skin diseases (Dhanam and Elayaraj, 2014)
<i>Corchorus capsularis</i> Linn. / RHT66292	Leaves	Cooked as vegetable	Stomachic, carminative, diuretic, antidiarrheal (Khare, 2007)
<i>Corchorus olitorius</i> Linn.	Leaves	Cooked as vegetable	Antimicrobial, antipyretic, gonorrhoea, increasing seminal viscosity (Khare, 2007), pre-delivery trouble (Bhattacharya and Borah, 2008)
<i>Cyanotis axillaris</i> Roem.	Leaves	Cooked as vegetable	Eardrum inflammation, ascites, abortions (Manju et al. 2011)
<i>Cyphostemma auriculatum</i> / RHT66316	Tender leaves, fruits	Cooked as vegetable	No medicinal uses known
<i>Digera muricata</i> Linn.	Young plant	Cooked as vegetable	Antibilous, astringent, laxative, diuretic (Khare, 2007)
<i>Dioscorea alata</i> Linn. / RHT66343	Tuber	Cooked as vegetable	Antispasmodic, anti-inflammatory, antirheumatic, diuretic, painful periods, cramps (Khare, 2007)
<i>Dioscorea belophylla</i> Voigt.	Tuber	Cooked as vegetable	Rich source of carbohydrates (Khare, 2007)
<i>Dioscorea bulbifera</i> Linn. / RHT65660	Tuber	Boiled, water drained out, then cooked as vegetable	Nervine and cardiac tonic, swellings, boils, ulcers, dysentery, piles, rich in carbohydrate (Khare, 2007)
<i>Dioscorea daemona</i> Roxb.	Tuber	Cooked as vegetable	Ulcer, kills worms in wounds (Khare, 2007)
<i>Dioscorea pentaphylla</i> Linn./ RHT66344	Tuber	Cooked as vegetable	Disperse swellings, rich in carbohydrates, albuminoids (Khare, 2007)
<i>Diplazium esculentum</i> Retz. / RHT66302	Curled fronds	Cooked as vegetable	All round health (Bharti, 2011)
<i>Dryopteris cochleata</i> Don.	Young leaves	Cooked as	Eczema, anthelmintic, rheumatic fever leprosy (Bharti, 2011)

		vegetable	
<i>Eryngium foetidum</i> Linn. / RHT66287	Leaves	Prepared as chutney	Common cold, cough & fever, cardiovascular, diuretic, antistrychnine activity (Khare, 2007)
<i>Ficus glabella</i> Blume / RHT66328	Tender leaves, buds	Boiled, water squeezed out, then cooked as vegetable	Gastric trouble (Sinha et al. 2007), colic, diarrhoea, dysentery (Kumari and Kumar, 2000)
<i>Ficus religiosa</i> Linn. / RHT66326	Tender leaves, buds	Boiled, water squeezed out, then cooked as vegetable	Menorrhagia, metrorrhagia, blood dysentery, bleeding piles, haematuria, haemorrhages, laxative (Khare, 2007), colic, dysentery, (Kumari and Kumar, 2000)
<i>Galium lanceolatum</i> Torr. / RHT66321	Young plant	Cooked as vegetable	Diuretic, kidney stone, gravel, gout (Khare, 2007)
<i>Gamochaeta pensylvanica</i> Willd. / RHT66317	Tender leaves	Cooked as vegetable	No medicinal uses known
<i>Gmelina arborea</i> Roxb.	Flowers	Boiled, water squeezed out, then cooked as vegetable	Demulcent, bechic, inflammatory diseases, oedema, dysuria, haemorrhagic diseases (Khare, 2007)
<i>Holarrhena antidysenterica</i> Linn. / RHT66221, 66314	Flowers	Cooked as vegetable	Anthelmintic, stomachic (Sinha et al. 2007), chronic amoebaasis, immune stimulant (Khare, 2007)
<i>Indigofera pulchella</i> Roxb. / RHT66309	Flowers	Boiled, water squeezed out, then cooked as vegetable	Promotes hair growth (Ediriweera, 2007), antiscorbutic, diuretic, alternative, antioxidant activities (Kumar et al. 2012)
<i>Ipomoea aquatica</i> Forssk. / RHT66305	Leaves	Cooked as vegetable	Rheumatism, inflammations, antioxidant (Sahu et al. 2013), purgative (Lal et al. 2012), gonorrhoea, blood purifier (Manju et al. 2011)
<i>Jussiaea repens</i> Linn. / RHT66333	Leaves	Cooked as vegetable	Cooling, diuretic, mild laxative (Khare, 2007)
<i>Jussiaea suffruticosa</i> Linn.	Leaves	Cooked as vegetable	Diuretic, astringent, mild laxative (Khare, 2007)
<i>Leucas aspera</i> Spreng. / RHT66198	Young plant	Cooked as vegetable	Ear ache, sore, snake bite, jaundice, antioxidant (Sahu et al. 2013), gastric trouble (Satapathy et al. 2012), dyspepsia, verminosis (Dhanam and Elayaraj, 2014), anorexia, dyspepsia, fever, helminthic manifestation, respiratory and skin diseases (Khare, 2007)
<i>Leucas cephalotes</i> Spreng. / RHT66199	Young plant	Cooked as vegetable	jaundice, inflammations, cough, bronchial asthma and intermittent fever, scabies (Khare, 2007)
<i>Limnophila conferta</i> Benth. / RHT66319	Tender shoot, Leaves	Cooked as vegetable	Gastric trouble (Sinha et al. 2007), anti-inflammatory (Khare, 2007), urinary complaints (Kumari and Kumar, 2000)
<i>Limnophila gratioloides</i> R. Br.	Tender shoot	Cooked as vegetable	Dyspepsia, dysentery, elephantiasis (Khare, 2007)
<i>Limnophila rugosa</i> Roth.	Tender shoot	Cooked as vegetable	Diuretic, stomachic, digestive tonic, used as a hair perfume (Khare, 2007)
<i>Madhuca indica</i> Gmel. / RHT65627	Fresh flower, unripe fruits	Flowers boiled with <i>Sal</i> seeds, Peeled fruits cooked as vegetable	Laxative, bechic, stimulant, nervine tonic (Khare, 2007), rich source of carbohydrates, proteins, minerals, vitamins (Patel and Naik, 2010), antibacterial, skin diseases, nasal drops for sinusitis, diarrhoea, colitis, increases seminal fluid, burning micturition, fever, dehydration, tuberculosis, haemorrhage (Akshantha et al. 2013)
<i>Marsilea minuta</i> Linn. / RHT66311	Leaves	Cooked as vegetable	Bronchitis, psychopathy, ophthalmia, stranguary, diarrhoea, leprosy, skin disease, fever, sedation, haemorrhoids, dyspepsia, insomnia (Bharti, 2011), anti-inflammatory, diuretic (Dhanam and Elayaraj, 2014)
<i>Marsilea quadrifolia</i> Linn.	Leaves	Cooked as vegetable	Soporific effect, hypertension, headache, nervous disorders, body aches, insomnia, epilepsy (Prafulla and Singh, 2012), antidote, antiphlogistic, depurative, diuretic, febrifuge (Lal et al. 2012)
<i>Medicago lupulina</i> Linn.	Young plant	Cooked as vegetable	No medicinal uses known
<i>Medicago polymorpha</i> Linn. / RHT66288	Young plant	Cooked as vegetable	Nutritive, emollient, antispasmodic, laxative and also used as constipation (Razzaq et al. 2013)
<i>Melochia corchorifolia</i> Linn.	Young plant	Cooked as vegetable	Antidiysenteric, swellings of abdomen and sores (Khare, 2007)
<i>Melothria heterophylla</i> Lour. / RHT66341, 66342	Tuber	Cooked as vegetable	Dysuria and spermatorrhoea (Khare, 2007), antifertility activity (Harish and Swamy, 2012)
<i>Mentha arvensis</i> Linn.	Leaves	Prepared as chutney	Flatulence, functional gastrointestinal and gallbladder disorders (Khare, 2007)
<i>Momordica dioica</i> Roxb.	Fruits	Cooked as vegetable	Diuretic, alexiteric stomachic, laxative, asthma, hepatoprotective, leprosy, fever, mental disorders, elephantiasis (Bawara et al. 2010)
<i>Moringa oleifera</i> Lam.	Leaves, flowers, pods	Cooked as vegetable	Anti-inflammatory, cardiac and circulatory stimulant, antipyretic, anthelmintic, diuretic, hypoglycaemic (Khare, 2007)
<i>Oxalis corniculata</i> Linn. / RHT66235	Leaves	Cooked as vegetable	Anorexia (Ediriweera, 2007), anemia, tympanitis, dyspepsia, dysentery and piles (Lal et al. 2012; Satapathy et al. 2012), appetizer, cough, jaundice, rickets, scurvy (Kumari and Kumar, 2000)
<i>Oxalis Corymbosa</i> DC / RHT66336	Leaves	Cooked as vegetable	No medicinal uses known

<i>Oxalis latifolia</i> Kunth / RHT66335	Leaves	Cooked as vegetable	No medicinal uses known
<i>Pergularia daemia</i> Forssk. / RHT66318	Tender Leaves, flowers	Cooked as vegetable	Uterine & menstrual disorders, facilitates parturition (Jeeva et al. 2006)
<i>Physalis minima</i> Linn. / RHT66325	Seeds	Cooked as vegetable	Diuretic, febrifuge, seasonal fever, jaundice (Lal et al. 2012; Satapathy et al. 2012), urinary purgative (Dhanam and Elayaraj, 2014)
<i>Polygonum glabrum</i> Willd. / RHT66308	Tender shoot, leaves	Cooked as vegetable	Anthelmintic, astringent, cardiotonic, fever (Lal et al. 2012; Kumari and Kumar, 2000), febrifuge, colic pain, jaundice, debility (Manju et al. 2011)
<i>Polygonum plebejum</i> R. Br. / RHT66329	Young plant	Cooked as vegetable	Haematuria, dysuria, piles dermatitis (Ediriweera, 2007) Cough, Dysentery, Lactation, Gastric trouble (Kumari and Kumar, 2000)
<i>Portulaca oleracea</i> Linn. / RHT66293	Tender shoot	Cooked as vegetable	Mouth ulcer, sore nipples, scurvy, disease of kidney, liver, spleen bladder and cardio-vascular system (Lal et al. 2012), pyorrhea, insulin secretion (Satapathy et al. 2012), blood purifier, fever, sun stroke (Kumari and Kumar, 2000)
<i>Portulaca quadrifida</i> Linn.	Tender shoot	Cooked as vegetable	Burns, ulcers (Kumari and Kumar, 2000), asthma, cough, urinary discharges, inflammations, haemorrhoids (Khare, 2007)
<i>Pueraria tuberosa</i> Roxb. / RHT66416	Tuber	Cooked as vegetable	Diuretic, cardiac tonic, fertility control, fever, swelling of joints (Khare, 2007), antioxidant, hypolipidaemic, vasorelaxant, cardioprotective, cerebral ischemia protective (Verma et al. 2009)
<i>Rumex dentatus</i> Linn. / RHT66304	Leaves	Cooked as vegetable	Astringent, cutaneous disorders (Khare, 2007), laxative (Kumari and Kumar, 2000)
<i>Rumex maritimus</i> Linn.	Leaves	Cooked as vegetable	Cathartic, externally applied to burns (Khare, 2007)
<i>Rungia parviflora</i> Nees.	Young plant	Cooked as vegetable	Aperient, febrifuge, refrigerant, small pox (Khare, 2007)
<i>Scirpus grossus</i> Linn.	Tuber	Cooked as vegetable	Laxative (Lal et al. 2012), dysentery (Satapathy et al. 2012)
<i>Shorea rubusta</i> Gaertn. / RHT66424	Seeds	Boiled, dried, powdered to eat with boiled <i>Mahuafowers</i>	Anti-inflammatory, antipyretic, antidiarrhoea, anti-dysentery, laxative (Wani et al. 2012), tubercular ulcers, seminal weakness, burning sensation and dermopathy (Soniet al, 2013)
<i>Solanum indicum</i> Linn. / RHT66323	Fruits	Boiled, water drained out, then cooked as vegetable	Carminative, expectorant, used for colic, dysuria, coughs and catarrhal affections (Khare, 2007), wide spectrum of dietary antioxidants (Aberoumand, 2012)
<i>Solanum nigrum</i> Linn. / RHT66324	Fruits	Boiled, water drained out, then cooked as vegetable	Erysipelas (Ediriweera, 2007), inflammation, pain, fever and enteric diseases (Kumar and Pandey, 2014; Lal et al. 2012) demulcent, laxative, blindness, conjunctivitis, glaucoma, trachoma, cataract, bed wetting (Jain et al. 2011)
<i>Solanum torvum</i> Sw. / RHT66216	Fruits	Boiled, cooked as vegetable	Cold and cough, rheumatism (Ekka, 2011), cough, liver and spleen enlargement (Khare, 2007)
<i>Spergula arvensis</i> Linn.	Tender shoot, leaves	Cooked as vegetable	Antibacterial, antifungal activities, laxative, diuretic (Ahmad, 2013)
<i>Sphaeranthus hirtus</i> Linn. / RHT66337	Tender shoots, Leaves	Boiled, water drained out, then cooked as vegetable	Chronic cough, Rhinitis (Ediriweera, 2007) depurative (Lal et al. 2012), dysuria (Satapathy et al. 2012), skin diseases and as a nerve tonic (Jeeva et al. 2006)
<i>Trianthema monogyna</i> Linn./ RHT66312	Young plant	Cooked as vegetable	Diuretic, used in oedema and dropsy (Khare, 2007)
<i>Trianthema portulacastrum</i> Linn.	Young plant	Cooked as vegetable	Dysuria, Oedema (Ediriweera, 2007), migraine, rheumatic pains (Satapathy et al. 2012)
<i>Vangueria spinosa</i> Roxb. / RHT66313	Leaves	Cooked as vegetable	Improves digestion, gastric trouble, dysentery (Kumari and Kumar, 2000)
<i>Vicia hirsuta</i> Koch. / RHT66291	Young plant	Cooked as vegetable	No medicinal uses known
<i>Vicia sativa</i> Linn. / RHT66303	Young plant	Cooked as vegetable	No medicinal uses known
<i>Vitis riparia</i> Michx. / RHT66296	Fruits	Cooked as vegetable	No medicinal uses known

DISCUSSION

It is estimated that in India about 800 species are consumed as wild edible plants, chiefly by the tribal people (Bandyopadhyay and Mukherjee, 2009). The food habits of the tribals have generally developed according to the availability of food materials from the surroundings of their settlement in the hills and the jungles. Without knowing the nutritional value, they consume a large number of weeds and wild

plants. The choice of plants as food has traditionally come down to them based on the palatability and taste of the plants. They can identify the plants quickly with some characters and give name to the plants based on these characters (Ramchandran and Udhayavani, 2013). Crop field weeds, regarded undesired and neglected as the constant source of annoyance and trouble to the farmers are simply eradicated by plucking and throwing away; but in fact, they are important from the standpoint of

medicinal, allelopathic and food values (Bhattacharjya & Borah, 2008). The tribals have been consuming these weeds for generations not as medicine but as food. The study reveals that all the weeds from the crop fields and wastelands possess medicinal properties which was observed in the review of literature. These properties keep the tribals healthy and fit for hardworking labour throughout the day (Reddy, 2011). It was observed that the healthy life of the tribals depends on seasonal consumption of herbs and not on the occasional consumption. The survey discloses that the government and the private healthcare centres have never registered the cases of hypertension, diabetes and cholesterol related ailments from the rural tribal communities dwelling in hills and valleys. However, there have several cases of such ailments among the same tribal groups who have dislodged themselves into cities and living urbanized lifestyle depending on the vegetables from the market. Some of the less known edible weeds are given in Fig 2.

The observation indicated that the women, particularly the housewives and the elderly women were quite familiar with the edible weeds from the crop fields. Table 3 shows that out of 101 species, 38 species are available during rainy season in the *Kharif* crop fields and wastelands. The number of weeds available during winter in *Rabi* crop fields is 19 species followed by 24 species which are found in both rainy and winter seasons. During spring, only 3 species are available while in summer 10 species

have been reported to be available. Besides, few species namely, *Ipomoea aquatica*, *Mentha sativa*, *Colocasia esculenta*, *Centella asiatica*, *Limnophila conferta*, *Limnophila gratioloides* and *Rungia parviflora* are found throughout the year in marshy and damp places. Perennial species, namely *Indigofera pulchella*, *Bauhinia spp.*, *Ficus spp.*, *Madhuca indica* and *Shorea robusta* bear the edible plant parts only in summer. Earlier, few species of edible weeds have been reported to be consumed by the tribes of Jharkhand, Odisha and Bengal wherever the Oraon tribes have inhabited (Sinha et al. 2004; Sinha and Lakra, 2005; Sinha and Lakra, 2007; Lal et al. 2012; Singh and Kumar, 2012; Misra and Misra, 2013). There has been a constant search for healthier food by the humans. In this context, the tribals play a vital role towards nutritional and medicinal values of the weeds and wild plants that can help prevent the modern diseases such as cancer, hypertension, diabetes and cholesterol related diseases. A statistical study of the wild edible plants of Latehar district belonging to different plant groups and composition of their life forms is presented in Tables 4. It is evident from the Table 4 that Oraon tribals mainly consume dicotyledonous plants (87 spp.) in relation to monocotyledonous plants (12 spp.) and pteridophytic plant group (2 spp.). It is also evident from Table 2 that the tribals of Latehar consume leafy vegetables on maximum occasions than the other plant parts such as tubers, flowers, fruits, and seeds.

Table 3
Number of species available in various seasons

Season of Availability	Number of species
Rainy	38
Winter	19
Rainy & Winter	24
Spring	3
Summer	10
Whole year	7
Total	101

Table 4
Composition of edible weeds and wild plants under different categories of life forms.

Plant Group	Herbs	Shrubs	Trees	Climbers	Grass
Pteridophytes	2	-	-	-	-
Dicotyledons	65	3	10	9	-
Monocotyledons	1	-	-	8	3
Total	68	3	10	17	3

Fig. 2: Less Known Edible Weeds & Wild Plants of Oraon Tribals



CONCLUSION

The study revealed that the consumption of the edible weeds and wild plants among the *Oraons* has reduced to a large extent and thus the ethnobotanical knowledge may be lost in the future, thus needs documentation. This is due to

the urbanized life style among the educated and wealthier tribals. Biochemical investigations of these edible weeds need to be done to know not only the food and nutritional values but also the chemical compounds that are useful for human health as medicine. If the wild edible weeds are evaluated for their nutritional value and brought

under cultivation, it will unfold the market potential in the tribal belt of the state.

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