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Preeti Kumari
Department of Botany, Ranchi
University, Ranchi, Jharkhand,
India

SK Tiwari
BRSM College of Agricultural
Engineering and Technology,
IGAU, Raipur, Chhattisgarh,
India

AK Choudhary
Department of Botany, Ranchi
University, Ranchi, Jharkhand,
India

Current status of medicinal plants: A case study from the palamu tiger reserve & betla national park, Jharkhand, India

Preeti Kumari, SK Tiwari and AK Choudhary

Abstract

Plamau Tiger Reserve (PTR) and Betla National Park (BNP) is famous for tigers. Tourist across India used to come here to see tigers and many rare animals in open air. One more potential of BNP should be explored i.e. Betla in Jharkhand could be a hot medical tourist spot. The tribal people inhabit in the forest areas of PTR of Jharkhand, collect potential and effective medicinal plants and utilized by them for meeting their primary health care. The medicinal uses of plants species have been recorded from the tribal medicine men such as *Jangurus*, *Ojhas*, *Manjhis* etc. during the survey and field studies among them. These tribes have traditional knowledge about use of this medicinal plant. It has been observed in the present study that the total 139 medicinal plants belong to 56 families. One rare medicinal plant of forest is harjodwa commonly known as 'Panivel' *Cissus repanda* Vahl. (Syn. *C.rosea*, *Vitis repanda* and *V. rosea*) belong to *Family Vitaceae*. These tribes use the indigenous flora for various medicinal purposes in their daily life as local people have faith and belief in these medicines. The present paper highlights some of the potential medicinal plant species that are used as traditional herbal remedies by the tribal people. Ethno-botanical information about medicinal plants is given by mentioning their botanical name, family, local name, ecology and uses.

Keywords: Medicinal Plant, Ethno-medicine, Current Status, BNP, PTR.

1. Introduction

Plamu Tiger Reserve (PTR) and Betla National Park (BNP) is famous for tigers, Tourist bungalow, tree house has been a attraction for tourist. As the number of tigers and other animals are decreasing ^[1] due to poaching and other cause, Since time immemorial, the Jharkhand state being the land of Lord Baidynath; known as natural sanctuary of spiritual, cultural and herbal heritage in India. The state of Jharkhand lies between latitude 22°00' - 24°37' N and longitude 83°15' - 87°01' E and well known due to tribal populations, mineral rich region, tropical dry deciduous forests etc. According to satellite data of Oct.-Dec. 2011, the forests cover is 28.72% of state's geographic area¹. Jharkhand has a tropical climate with annual rainfall of about 900 mm and the temperature varies between 4°C to 47°C. The total population of the state is 26.91 million of which the rural population constituted 77.80% while the schedule tribe constituting 22.50 %. The tribal's, forest dwellers and rural people have a rich oral tradition and native and ethnic knowledge about ambient vegetation and forests. A large number of tribal communities like Santhal, Paharia (Sauria Paharia, Mal Paharia and Kumar Bhag), Oraon, Munda, Kol, Kharwar, Ho, Asur, Baiga etc. are residing in state and having great ethno-botanical ^[2-10]. The tribes collect and utilized various herbs, roots, rhizomes, tubers, flowers, fruits, leaves and seeds of many useful plants for meeting their day to day needs and health care from the surrounding forest areas. Santhal is one of the largest tribe and belongs to Austro-Asiatic race. They are concentrated mainly in Santhal Pargana region along with Paharia tribes. The tribal communities like Munda, Oraon, Kol, Kharwer etc. are concentrated in Chotanagpur plateau ^[11-15]. They practice primitive agriculture observing traditional beliefs myths, gathering foods, hunting and fishing. During the course of the investigation in the tribal tracts and forest area of Santhal Pargana and Chotanagpur were surveyed and studies with the help of knowledgeable information's and practitioners of ethno-medicine. plants and their presence in surrounding areas of forests mostly *Sal* and their associated. The data on the utilization of ethno-medicinal plants have been recorded and repeatedly verified among their communities. The medicinal uses of plants are well known by tribal medicine men, *Jangurus*, *Ojhas*, *Manjhis*, *Pahan* etc. who have tradition to see *Tail-patta* means mustard oil polished in leaves of *Sal* tree and diagnoses about diseases and other spiritual problems during the survey and field studies among them. The ethno-botanical studies have also been carried out in these tribal tracts earlier by several workers ^[16-19] of ethnic people.

Correspondence
SK Tiwari
BRSM College of Agricultural
Engineering and Technology,
IGAU, Raipur, Chhattisgarh,
India

The main objective of this research paper is to report and identified the medicinal plants present in Palamu Tiger Reserve in Latehar district of Jharkhand state. The observed plants species are arranged giving information with botanical names, local names, types, family and part used for disease wise.

2. Methodology

The plants recorded in the present field studies as association pattern of PTR areas trees have been compared with ethno-medicinal formulations, compositions and preparations prepared and used by the tribals, forest dwellers and rural people of Jharkhand as recorded in random studies of association pattern of trees in Barwadih, Manika, Mahuadnar and Garu block in Latehar District which are approachable by local and tribal people. The analysis on association patterns of trees have been out by the help of ground level check of flora studied with twenty five quadrats of 12m x 12m size based on species area curve methods in study sites and occurring plants have been recorded followed with standard ecological works 26. The plants have been documented occurs in the above quadrates and enumerated.

3. Result and discussion

An account of about 139 species (Table-1) has been recorded as associated species of PTR trees having potential ethno-medicinal uses among different ethnic community, forest dwellers and rural people of Jharkhand. The tribal medicine men, *Janguru*, *Ojha*, *Manjhi*, *Veed*, *Beega* etc. prepare, paste, pills, powder, decoction, aqueous extract, ointment etc. for treating their diseases and disorders from single plant or in combination with different plant species. The species are arranged under different disease and disorders giving information on scientific names, local names, tribes and parts used. The most common medicinal plants found and its uses for different daises are as follows:-

3.1. *Achyranthes aspera* L. (Apamarga)

It is Uses for treatments of Fever:- Roots are tied around the neck, *Asthma*:- Whole plant (50-100g) is ground into a fine powder. 5g of this powder is taken with water till the ailment cures, *Poisonous bites*:- Roots (25g) are ground into a fine paste, and juice is extracted. The Juice is taken orally and the remaining paste is applied on the bite site, *Abscess*:- Root paste is applied on the abscess ^[19]

3.2. *Aegle marmelos* (L.) Corr. (Bel)

It is Uses for treatments of *Eye ailments*:- Two drops of juice extracted from the green leaves are put in the eye, *Sunstroke*:- Juice extracted from the fresh leaves is taken orally, *Dysentery*:-One fruit is soaked in a litre of water, seeds are removed and juice is extracted from the pulp, sugar (20g) is added and the juice is administered orally, *Diabetes*:- Juice is extracted from fresh leaves (25g) and administered orally on an empty stomach ^[20].

3.3 *Alstonia scholaris* (L.) Br. (Chatawan)

It is Uses for treatments of *Headache*:-Juice extracted from bark (20g) is given orally. Fever: Powdered bark (50g) is taken with water thrice a day, *Stomachache*: Juice extracted from bark (20g) is administered orally, *Joint pain*: Bark paste is applied on the aching join ^[20].

3.4 *Argemone mexicana* L. (Satyanasi)

It is Uses for treatments of *Fever*: One teaspoon of root decoction is taken with a glass of water twice a day for 2 to 3

days, *Itching*: Seeds (50g) are ground, mixed in coconut oil and applied on the infected body part, *Eczema*: Whole plant (25g) is crushed along with black pepper (2 nos) and the paste is applied topically, *Poisonous bites*: Juice extracted from roots is administered orally ^[20].

3.5 *Bombax ceiba* L. (Semal)

It is Uses for treatments of *Gynaecological disorder*: Gum (5g) is ground, mixed with water and administered for 5 days, *Pimples*: Paste of thorns and milk is applied on the pimples for 7 Days, *Wound*: Fresh bark is ground, mixed with little water and applied on the infected part *Diarrhoea*: A spoonful of juice extracted from the leaves is given along with sugar candy for 4 days, *Constipation*: Bark powder (3g), coriander powder and jaggery are taken with water, Piles: Ground roots to make a paste. Paste (10g) is taken with water for seven days, *General health*: Few flowers are soaked in a glass of water overnight and taken next morning for giving a cooling effect to the body ^[19].

3.6 *Butea monosperma* (Lamk.) Taub. (Palash)

It is Uses for treatments of *Cuts & wounds*: Juice extracted from bark is applied. *Intestinal worms*: Seeds (3-4 nos.) are ground in water and given orally. *Toothache*: Resin powder is filled in damaged gums, *Acidity*: Resin (2g) is taken with cold water, *Dysentery*: Resin (25g) is administered orally, *Joint pain*: Powdered resin is taken with milk ^[19].

3.7 *Celastrus paniculatus* Willd. (Malkangani)

It is Uses for treatments of *Tuberculosis*: 3 drops of oil are mixed in yolk of egg and administered, *Graying of hair*: Oil is applied on the scalp, *Gas/acidity*: 2-3 gm of powdered seeds is taken orally with water, *Skin disease*: Oil is applied on the infected place ^[21].

3.8 *Centella asiatica* (L.) Urban (Brahmi)

It is Uses for treatments of *Jaundice*: Plant (10g) is ground, mixed with water, filtered and the extract is taken, *Anorexia*: Juice from leaves (25g) is extracted and administered orally, *Skin disease*: Plant is taken as a vegetable regularly ^[21].

3.9 *Datura metel* L. (Dhatura)

It is Uses for treatments of *Asthma*: A seed soaked in water is taken orally initially, gradually a seed is increased every week for five weeks, *Stomachache*: Warm leaves are put on the belly, *Arthritis*: Paste of the leaves is applied on the aching part, *Backache*: Roots (20g) are boiled in mustard oil (250g), filtered and the oil is massaged ^[22].

3.10 *Leucas aspera* Spr. (Guma)

It is Uses for treatments of *Migraine*: 2 drops of the juice extracted from freshly plucked leaves is put in the nose, *Sinusitis*: Juice of leaves is put in the nose, *Stomachache*: Curry made from the plant is taken, *Jaundice*: Juice from pounded leaves is extracted and little quantity of goat urine is mixed; this is given twice a day for 4 days ^[22].

3.11 *Pongamia pinnata* (L.) Pierre (Karanj)

It is Uses for treatments of *Toothache*: Teeth are brushed with its stem, *Fever*: Seeds (10g) and black pepper (2nos) are ground together, pellets of gram size are prepared and taken orally, *Inflammation*: Paste of the seeds of karanj (few), ginger (4g) and asafetida (1g) is prepared and administered orally with water, *Skin diseases*: Seed oil is applied on the infected place ^[23].

3.12 *Solanum nigrum* L. (Makoi)

It is Uses for treatments of **Nasal bleeding**: Dry fruit (25g) is boiled in mustard oil (100g). The oil is filtered and applied on the forehead, **Mouth ulcer**: Leaves are chewed, **Cough**: Juice extracted from the roots is taken orally, **Jaundice**: Juice extracted from the roots is administered orally [24].

3.13 *Cissus repanda* Vahl (Harjodwa)

It is also known as pani vel. (Syn. *C.rosea*, *Vitis repanda* and

V. rosea) and belong to Family *Vitaceae*, commonly known as 'Panivel'. It is used for treatment of bone fracture of human as well as animals [25].

3.14 Canarese

A folklore medicinal herb, reputed for the healing properties of its roots and stem. The tribble people and Traditional practitioners of Jharkhand prescribing the root powder of this plant in case of bone fractures, cuts, boils and wounds [25].

Table 1: List of Medicinal Plants found in Palamu Tiger Reserve and Bela National Park Areas, Jharkhand, India.

S. No	Botanical Names	Local Names	Types	Family	Part Uses
1	<i>Acorus calamos</i> Linn	Wach	Shrub	Araceae	Root
2	<i>Adhatoda vasica</i> Nees	Vassa	Shrub	Acanthaceae	Leaf, Root and Stem
3	<i>Asparagus recemosus</i>	Satawari	Shrub	Liliaceae	Root
4	<i>Abutilon indicum</i> Linn	Atibala	Shrub	Malvaceae	Leaves, Root, Bark Whole plant
5	<i>Andrographis peniculata</i> Nees	Kaalmedh	Herb	Acanthaceae	Leaves, Stem
6	<i>Anadropogon muricatus</i> linn	Khas	Grass	Graminae	Root
7	<i>Acacia arabica</i> willd	Babul	Tree	Mimosaceae	Leaves, Seed, Bark Gum.
8	<i>Agaricus campestris</i> linn	chhatrak	Herb	Agricaceae	Whole plant
9	<i>Ailanthus excelsa</i> roxb	Aralu	Tree	Simaroubaceae	Root, Leaves
10	<i>Acacia catechu</i> wilrd	Kheer	Tree	Liguminosa	Leaves, Bark, Resin
11	<i>Aegle marmelos</i> corr	Bel	Tree	Rutaceae	Bark, Fruit
12	<i>Acacia farnesiana</i> willd	Arimed	Tree	Mimosidae	Stem, Bark Heart wood
13	<i>Abrus pricatorivis</i>	Karjani	Climber	Leguminoceae	Seed
14	<i>Acacia nilotica</i> willd	Babul	Tree	Leguminosaea	Stem, Leaves, Pod
15	<i>Azadirachta indica</i> A.	Neem	Tree	Meliaceae	Root, Stem, Leave seed
16	<i>Bacopa mounieri</i> linn. pennell	Andri	weak plant	Plantginaceae	Whole plant
17	<i>Barleria prioniitis</i> Linn	Sareyak	Shurb	Acanthaceae.	Whole plant
18	<i>Benincasa hispido</i> thunb	Kusmand	Climber	Cucurbitaceae.	Fruit
19	<i>Boerhaavia diffusa</i> Linn	Rakt punarnwa	Herb	Nyctaginaceae	Leaves
20	<i>Blumea lacera</i> De	Kukuroonda	Herb	Compositae	Leaves
21	<i>Basell rubra</i> linn	Poisaaag	Climber	Chenopodiaceae	Leaves, Stem
22	<i>Benincasa cerifera</i> .	Petha	Climber	Cucurbitanaceae	Leaves, Fruit
23	<i>Benincasa uchanani a lanzan</i> spreng	Peyaar	Tree	Anacardiaceae	Seed
24	<i>Bauhinia variegata</i> linn.	Kachnaar	Tree	Leguminosac,	Seed,Root,
25	<i>Boswellia seffata</i> roxb	Slai	Tree	Burseraceae.	Leaves, seed, gum resin
26	<i>Bultea frondosa</i> roxb	Palash	Tree	Fabaceae	Whole plant
27	<i>Butea superba</i>	Lata palash	Climber	Papilionaceae	Root
28	<i>Cucurbita mazima</i> Duch	Kadu No. 1	Climber	Cucurbitaceae.	Fruit, seed
29	<i>Cucurbita lagenaria</i>	Kadu No. 2	Climber	Cucurbitaceae	Whole plant
30	<i>Cucumis dudain</i>	Chitrafala	Climber	Cucurbitaceae	Seed
31	<i>Celastrus anniculantus</i> willd	Jyotismati	Climber	Celastraceae	Stem, Seed
32	<i>Convolvulus pluricaulis</i> chois	Shankhpuspi	Herb	Convolvulaceae	Whole plant
33	<i>Costus speciosus</i> (Keeing)	Kebook	Shurb	Zingiberaceae	Rhizome
34	<i>Centella asiatica</i> Linn Urban	Mandukaparni	(Weak plant) Prostrate	Umbelliferae	Aerial part
35	<i>Cissampelos pareria</i> Linn	Patha	climber	Menispetmaceae	Whole plant
36	<i>Cocculus hirsutus</i> (Linn) Diel	Chilhinh	Climber	Menipermaceae	Leaves, Roots
37	<i>Cyperus scariosus</i> Lour	Mustak	Herb	Compositae	Tuber
38	<i>Centipeda orbicularis</i> Lour	Chhwak	Herb	Compositae	Seed, Aerial parts
39	<i>Cassia occidentalis</i> Linn	Ksoondi	Herb	Leguminoceae	Seed
40	<i>Coccinia indica</i> Naud	Kunduru	Climber	Cucur bitaceae	Leaves
41	<i>Cynodon dactylon</i> pers	Duub	Grass	Graminae	Whole plant
42	<i>Cichorium intybus</i> linn	Kasani	Herb	Compositae	Aerial parts
43	<i>Chenopodium album</i>	Bathua	Herb	Chenopodiaceae	Whole plant
44	<i>Capparis sepiaria</i> linn	Heens	Shurb	Capparidaceae	Leaves
45	<i>Carissa carandulas</i> linn	Karronda	Small Tree	Apocynaceae	Fruit
46	<i>Clerodendrum serratum</i> linn	Vaarangi	Herb	Verbenaceae	Roots
47	<i>Clerodendrum serratum</i> rinn	Dhanyak	Herb	umberiiliferae	Leaves
48	<i>Cissus quadrangularis</i> linn	Asthi Shrinkhala	Climber	Vitaceae	Root
49	<i>Capsicum annum</i> linn	Lanka	Herb	Solanaceae.	Fruit
50	<i>Curcuma zedoia</i> rose	Karchur	Herb	Zingiberaceae	Leaves,Fruits
51	<i>Cassia fistula</i> linn.	Amaltaash	Tree	Leguminosac	Root,Bark,Leaves
52	<i>Crataeva nurvala</i> buchham	Varun	Tree	Capparidaceae	Whole plant

53	<i>Curcuma an gustifoli a roxb</i>	Tekhur	Herb	Zingiber aceae	Tuber
54	<i>Calotropis procera R</i>	Akwan	Shurb	Ascelpiadaceae	Root, Stem
55	<i>Dioscorea bulbifera linn</i>	Geethi	Climber	Dioseoriaceal	Tuber, Rhizome
56	<i>Desmodium gangatiium</i>	Saalpami	Shrub	Leguminosae	Rhizome
57	<i>Diospyros peregina</i>	Tenduk	Small tree	Li liaceae	Leaves
58	<i>Dalbergia sissoo roxb</i>	Seesam	Tree	Liguminosa	Stem
59	<i>Embelia ribes burm. F</i>	Vidang	Shrub	Myrsinaceae	Root, Fruits
60	<i>Eragrostis cynosuroides beauv</i>	Kush	Grass	Graminae	Root
61	<i>Eucalyptus globulus labill</i>	Teelparn	Hugerree	Mytaceae	Leaves
62	<i>Emblia officinalis gaerin.</i>	Aawala	Tree	Euphorbiaceae	Fruit
63	<i>Ficus hispida Linn. F.</i>	Kakodumbar	Shrub or Small tree	Urticaceae	Whole plant
64	<i>Fumaria parviflora linn</i>	Pitpapra	Herb	Fumariaceae	Aerial parts
65	<i>Feribua elephantum con</i>	Keeth	Tree	Rutaceae	Fruit
66	<i>Ficus glomerata roxb</i>	Gular	Tree	Moraceae	Whole plant
67	<i>Ficus benganlensis linn</i>	Bargad	Tree	Moraceae	Whole plant
68	<i>Gmelina arborea linn</i>	Gamhaar	Tree	Ligumibnosae	Leaves,Stem
69	<i>Gloriosa superba Linn</i>	Kalihari	Climber	Diliaceae	Tuber
70	<i>Gossypium herbaccum Linn</i>	Karpaasi	Shurb	Malvaceae	Root, Leaves,Fruit
71	<i>Grewia tiliaefolia Vahl</i>	Dhwan	Tree	Tiliaceae	Stem bark
72	<i>Gitoria ternatea linn</i>	Aprajita	Climber	Leguminoseae	Flower,Fruit
73	<i>Gymnema sylvestre</i>	Gudnar	Climber	Asclepiadaceae	Leaves,bark
74	<i>Holorrhena antidysentorica</i>	Kutz	Shrub & Small Tree	Apocyanaceae	Seed,Bark
75	<i>Hibiscus rosa sinensis Linn.</i>	Japa	Shrub	Mavaceac	Root, Leaves, Flower
76	<i>Holoptelea integrifolia planch</i>	Chirbilav	Tree	Ulmaceae	Whole Plant
77	<i>Helicteres isora linn</i>	Mrorfali	Shurb	Sterculiaceae	Root, Stem, Bark Flower
78	<i>Hemidesmus indicus R</i>	Anantmul	Climber	Asclepiadaceae	Root, Leaves
79	<i>Indigofera pansifolia</i>	Neel Jangali	Herb	Paplionaceae	Whole Plant
80	<i>Ledtabenia retiulate W&A</i>	Jiwanti	Shurb	Asclepiadaceae	Leaves,Flowers
81	<i>Lawsonia inermis Linn</i>	Madyantika	Shurb	Lythraceae	Leaves,Bark Seed
82	<i>Leucas ecephalotes spreng</i>	Guma	Herb	Labiatae	Whole Plants
83	<i>Litsea glurinos</i>	Medasak	Tree	Porygonaceae	Bark
84	<i>Momordica cochinchensis</i>	Bandhya karkotki	Climber	Cucurbitaceae	Stem
85	<i>Momordica dioic a</i>	Kheksa	Climber	Cucurbitaceae	Stem
86	<i>Mentha viridis Linn</i>	Pudina	Herb	Labiatae	Whole plant
87	<i>Mallotus phillippenensis Muell</i>	Kamila	Tree	Euphorbiaceae	Bark
88	<i>Melilotus indicum linn</i>	Banmethi	Climber	Rutaceae	Leaves, Seed
89	<i>Mimusops hexandra roxb.</i>	Khirmi No 1	Tree	Sapotaceae	Bark
90	<i>Madhuca indica J.F. Gmel</i>	Madhuk	Tree	Sapotaceae	Leaves
91	<i>Mimusops elengi linn</i>	Bakul (Moolsri)	Tree	Sapotaceae	Leaves
92	<i>Mucuna pruriens</i>	Kenwach	Climber	Paririonaceae	Leaves
93	<i>Mangifera indica linn</i>	Aam	Tree	Anacardiaceae	Fruit
94	<i>Nelumbium speciosum willd</i>	Kamal	Herb	Nymphaeaceae	Whole Plant
95	<i>Nerium indicum Mill</i>	Kaner Laal	Shurb	Apocynnaceae	Flower
96	<i>Nyctanthes arbortrist</i>	Samsehaar	Herb	Oleaceae	Whole Plant
97	<i>Oroxylum indicum vent</i>	Sonapaha	Tree	Bignoniaceae	Leaves
98	<i>Phoenix systvestris roxb</i>	Khajuri	Tree	Palmae	Fruit
99	<i>Premna mucronata Roxb</i>	Agnimanth	Tree	Verbenaceae	Bark
100	<i>Phaseolus trilobus</i>	Banmung	Climber	Papilionaceae	Leaves
101	<i>Pongamia glabrra, garedupa indica</i>	Karanj	Tree	Leguminosae	Seed
102	<i>Pacderia foctido linn</i>	Gandhi genhari	Climber	Rubiaceae	Seed
103	<i>Pterocarpus marsupium roxb</i>	Bejja	Tree	Combrefaceae	Bark
104	<i>Rabia cordifolia Linn</i>	Manjistha	Shurb	Rubiaceae	Whole Plant
105	<i>Ricinus communis Linn</i>	Arand	Shurb	Euphorbiaceae	Leaves, Seed
106	<i>Rhinacanthus nausuta kurz</i>	Uthiparni	Shurb	Acanthaceae	Leaves
107	<i>Rauwolfia serpentina benth</i>	Sarggandha	Herb	Apocynaceae	Whole Plant
108	<i>Redilanahus tithimaloi</i>	Nagadmani	Herb	Euphorbaceae	Leaves
109	<i>Rumek maritimus linn</i>	Palak jangali	Herb	Polygonaceae	Seed
110	<i>Side varonicifolia Linn</i>	Rajbala	Shurb	Malvaceae	Stem
111	<i>Side rhombifolia Linn</i>	Mahabala	Shurb	Malvaceae	Stem
112	<i>Sida cardifolia Linn</i>	Bala	Shrub	Malvaceae	Stem
113	<i>Saecharum spontaneum linn</i>	Kaans	Grass	Graminae	Whole Plant
114	<i>Spinacia oleracea</i>	Palak	Herb	Chenopodiaceae	Whole plant
115	<i>Solanum indicum linn</i>	Virhati	Herb	Solanaceae	Leaves
116	<i>Solanum surattense Burm</i>	Kantkari	Herb	Solanceae	Leaves
117	<i>Semecarpus anacardium linn</i>	Velwa	Tree	Anacardiaceae	Seed, Leaves
118	<i>Semecarpus anacardium linn</i>	Lodh	Tree	Anacardiaceae	Bark,Seed
119	<i>Spondias mangifera</i>	Aambara	Tree	Anacardiacea	Fruit
120	<i>Salmaal malabarica schobt & endi</i>	Semal	Tree	Bombacaceae	Flower, Fruit

121	<i>Shorea robusta gaertn</i>	Saal	Tree	Dipterocarpeae	Leaves,Seed
122	<i>Stereospermum suaveolens</i>	Pandar	Tree	Bignoniaceae	Stem
123	<i>Teramnus labialis spreng</i>	Vanurad	Climber	Cucurbitaceae	Seed
124	<i>Trianthema portuacastrum linn</i>	Swtpunarnwa	Herb	Ficoideae	Leaves,Fruit
125	<i>Trichodesma indicum R</i>	Andhahuli	Prostrate	Boragnaceae	Stem
126	<i>Thevetia nerifolia Juss</i>	Kaner Pila	Shrub	Apocynaceae	Flower
127	<i>Terminalia arjuna (roxb).</i>	Arjan	Tree	Combretaceae	Bark
128	<i>Terminalia chebula retz</i>	Hrar	Tree	Combretaceae	Seed
129	<i>Terminalia bellirica roxb</i>	Bahera	Tree	Combretaceae	Fruit
130	<i>Torminalia tomentosa. bedd</i>	Aasan	Tree	Combretaceae	Bark
131	<i>Tribulns terrestri s linn</i>	Gokharu	Herb	Zygophyllaceae	Whole Plant
132	<i>Urginia indica kunth</i>	Van plandu	Herb	Solanaceae	Stem
133	<i>Uraria pictadesv</i>	Prisinparni	Shrub	Leguminosae	Whole Plant
134	<i>Vitex negundo Linn</i>	Nirgundi	Shrub	Verbenaceae	Leaves
135	<i>Vernonia anthelmintica Wlld</i>	Kaligiri	Herb	Compositac	Whole Plant
136	<i>Vernonia cineria less</i>	Sahdevi	Herb	Compositae	Whole Plant
137	<i>Woodfordia fruticosa Kurz</i>	Dhatki	Shrub	Lytheraceae	Stem, Leaves
138	<i>Woodfordia fruticosa Kurz</i>	Fullghvai	Shurb	Lytheraceae	Whole Plant
139	<i>Zingrber zerumbet smith</i> ^[19-25]	Awanti	Herb	Seltaminaceae	Leaves

4. Conclusion

In the present study it has observed that total 139 medicinal plants which belong to 56 families present in PTR areas. One of the rare medicinal plant found in forest “harjodwa” commonly known as ‘Panivel’ *Cissus repanda* Vahl, it uses for treatment of bone fracture of human as well as animals. It has also observed that herbs, shrubs, climbers and trees plants are present and most dominating families are Malvaceae, Laguminaceae and Apocynaceae. Ethno-botany study is a multidimensional study which need complete knowledge from different corners because it includes societal need and replacement of resource through Indigenous traditional knowledge.

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