International Journal of Applied and Universal Research **E-ISSN No: 2395-0269**
Volume IX, Issue I, Jan. - Feb. 2022 **Available online at: www.ijaur.com**
Impact Factor- 4.180

DIVERSITY OF MEDICINAL PLANTS IN URBAN AREA OF DISTRICT CHHINDWARA: A CASE STUDY

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ABSTRACT: - Extensive ethno-medicinal survey was carried out to document the precious indigenous healthcare practices prevalent among the different ethnic groups included of urban area of District Chhindwara, Madhya-Pradesh, India. These people belonging to primitive or aboriginal culture possess a good deal of information about medicinal utility of plant species. During the survey, it was noted that plant parts, used by the urban area to cure various diseases and disorders. Indigenous healthcare practices, provide low cost alternatives, where western healthcare services are not available or are too expensive. A list of 92 plant species along with their parts used and the mode of administration for effective control in different ailments are given.

KEYWORDS: Diversity of medicinal plant, local names, urban area, District Chhindwara.

INTRODUCTION:-

Chhindwara district was formed on 1st November 1956. It is located on the South-West region of 'Satpura Range of Mountains'. It is spread from $21^0$28' to $22^0$49' Deg. North (longitude) and $78^0$10' to $79^0$28'Deg. East (latitude) and spread over an area of 11,815 Sq. Km. This district is bound by the plains of Nagpur District (in Maharashtra State) on the South, Hoshangabad and Narsinghpur District on the North, Betul District on West and Seoni District on the East. Chhindwara District ranks 10th in area in Madhya-Pradesh State and occupies 2.67% of the area of the state. The District is divided in to nine Tahsils (Amarwara, Bicchua, Chhindwara, Chourai, Junnardeo, Pandurna, Parasia, Sausar and Tamia), 11th Development Blocks (Amarwara, Bicchua, Chourai, Chhindwara, Junnardeo, Pandurna, Parasia, Sausar, Harrai, Mohkhed and Tamia), eight Panchayats (Sausar, Newton chocki, Chandameta Butaria, Harrai, Mohgaon, Chourai and Lodhikheda).

METHODOLOGY:-

Present work is based on the result of intensive survey, collection, and study of plant species of urban area, Chhindwara District. The field work has been conducted following the suggestion of Santapau (1955). The field trips were arranged 4-6 times in a month, in such a way so as to cover all parts of the areas and to collect all plants in flowering and fruiting stages. Field observations were recorded in note book. Observation includes information on habitat, habit, size of the plant, leaf, colour, variation of the flowers, scent of the flower association etc. local name were also noted. To illustrate the range of variation of the plants, 5-6 specimens from different localities have been collected, for each species. During collection following precautions have been taken. As far as possible specimens were collected on a clear dry day and were studied and examined as early as possible at the end of the day of collection. Whole plants were collected in case of plant, small piece of twig with leaves; flowers were taken for the preparation of herbarium specimens.

Considerable work has been done various ailments by of Madhya Pradesh Omkar Bawistale, T. R. Sahu, Pankaj Sahu and Brajesh Sahu (2007); Omkar Bawistale, Brajesh Sahu and Pankaj Sahu (2010); Omkar Bawistale, T. R. Sahu, Pankaj Sahu and Brajesh Sahu (2010); Omkar Bawistale, T. R. Sahu (2011); Omkar Bawistale, T. R. Sahu (2012); Bawistale Omkar, Dua V.K. & Sahu T. R. (2014) Omkar Bawistale, Pankaj Sahu, T. R. Sahu, Dev Nandini Sonekar & V.K. Dua (2015); Omkar Bawistale (2015); Omkar Bawistale, Omkar Solunke & T. R. Sahu (2018); Sharma Vikas, Rao, Sudhakar V, Diwan, R.K. Saxena, R.C. and Shrivastava, D.N. (2010); Rai M.K., Pandey A.K. and Deepak Achrya (2000); Pandey A.K. and Shukla P.K. (2008); Pandey A.K., Patra A.K. and Shukla P.K. (2005); Rai R, Nath V

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Voucher Specimen Collection: The voucher specimens were collected onsite during guided field walk, numbered, pressed, dried, and deep frozen for identification. Identification of specimens was carried out both in the field and in the herbarium. Identification was also carried out using Flora comparing with already identified specimens. Finally, the identified specimens were stored at the Department of Botany, Rajmata Sindhiya Govt. P.G. Girls College Chhindwara, Madhya Pradesh.

Data Availability: The data used in this study is available with the corresponding author upon request.

Species enumeration: In the following enumeration, the plant species are arranged with their scientific names, family, local name & vernacular names, urban uses and a brief note on medicinal plant parts used and mode of utilization and dosage.

Table No.: 01:- Plant list in urban area Chhindwara District M.P.

S. No.	Plants name & Family	Local Name	Medicinal Uses
1.	*Adhatoda zeylanica* Medik. Acanthaceae	Adusa	Decoction of leaves is taken orally 2 teaspoons 2-3 times daily in bronchitis.
2.	*Andrographis paniculata* wall. Ex. Nees. Acanthaceae	Kalmegh	Whole plant is boiled in water and the filtrate (About 2 teaspoons) is given for three-five days to treat malaria.
3.	*Abelmoschus manihot* (L.) Medik. Malvaceae	Jangli bhendi	Root extract given internally for a long duration in case of male impotency.
4.	*Aegle marmelos* (L.) Corr. Rutaceae	Bel	The pulp of ripe fruit is used in stomach disorders.
5.	*Amorphophallus campanulatus* Blume *ex* DC. Araceae	Suran	The tubers are crushed and applied in cases of snake bite.
6.	*Azadirachta indica* (Linn.) A. Juss. Meliaceae	Neem	It is believed that on brushing the teeth daily with the stick, the body becomes resistant against snake bite and bathing to cure skin afflictions.
7.	*Ailanthus excelsa* Roxb. Simaroubaceae	Maharukh	Stem of crushed leaves inhaled in tetanus, leaf decoction given internally as long treatment for joint pains.
8.	*Bombax ceiba* Linn. Bombaceceae	Semal	The roots of young seedlings are chewed for more vitality. The flowers are also given against semen discharge.
9.	*Caesalpinia bonducella* (Linn.) Roxb. Caesalpiniaceae	Gattaran	The seed powder is given to ladies against bleeding.
10.	*Calotropis gigantea* (Willd.) Ait. Asclediadaceae	Safed Akwan	The milky latex is applied on the inflamed parts of the body to reduce pain and swellings.
11.	*Carissa congesta* Wt. Apocynaceae	Karonda	The juice of root bark is given in fever.
12.	*Cassia fistula* L. Caesalpiniaceae	Amaltas	The fruit pulp is given in diabetes as a long term treatment.
13.	*Cassia auriculata* L. Caesalpiniaceae	Amoli, Chhoti.	The bark, flower and seeds in the form of decoction, juice or powder used to treat wound, diarrhoea, dysentery, worms, stops blood flow, diabetes.
14.	*Caesalpinia bonduc* L. Caesalpiniaceae	Gattar	The stem bark paste is eaten to Stomach pain.
15.	*Celastrus paniculatus* Wild. Celastraceae	Malkangni	The seed oil is used as massage oil in the cases of leprosy and bodyache.
16.	*Centella asiatica* Linn. Apiaceae	Brahmi	The decoction of the plant is given against discharge of yellowish urine.
17.	*Chlorophytum arundinaceum* Baker. Liliaceae	Safed musli	Root is taken as an aphrodisiac, Diarrhoea, Menstrual disorders and Tonic.

18.	*Cissus quadrangularis* Linn. Vitaceae	Hadjod	The entire plant Crushed into paste is eaten and applied on bone fracture. The wound heals shortly.
19.	*Crotalaria juncea* L. Fabaceae	Sann	Fine powder of seeds used in obesity, especially of women.
20.	*Curcuma angustifolia* Roxb. Zingiberaceae	Haldi	The rhizome paste mixed with milk is given in empty stomach in cases of fever, two times in a day up to seven days.
21.	*Dillenia pentagyna* Roxb. Dilleniaceae	Kelia sag	This mixture is then given to ladies for easy delivery, two times in a day upto three weeks.
22.	*Diplocyclos palmatus* (L.) C. Jeffrev. Cucurbitaceae	Shivlingi	Fine powder of seeds in milk is used in cases of both male and female sterility.
23.	*Euphorbia nerifolia* L. Euphorbiaceae	Sehund	Latex is mixed with Haldi powder and a paste is prepared, this paste is applied over swelled part of body.
24.	*Flacourtia indica* (Burm. f.) Merr. Flacourtiaceae	Dollar	The root paste is applied externally in skin diseases.
25.	*Ficus racemosa* L. Moraceae	Gular	Fruits given in diabetes and to check abortion.
26.	*Ficus religiosa* Linn. Moraceae	Pipal	The young leaves are used in snake bite. It is believed that the leaf petiole when inserted in both the ears sucks poison from the body.
27.	*Ficus hispida* L. Moraceae	Bhui gular	Fruit boiled in goat's milk, strained and given in enlargement of liver and also in jaundice.
28.	*Gloriosa superba* Linn. Liliaceae	Kalihari	The root and flower paste is used for killing the mouse and birds in crop fields and root paste is administered in the pregnancy upto four month.
29.	Gymnema sylvestre (Retz.) R. Br. *ex*. Schult. Asclepidiaceae	Gudmar	The leaf powder is applied on Diabetes and Menstrual disorders.
30.	*Helicteres isora* Linn. Sterculiaceae	Maror phalli	The aqueous extract of the seed in smally quantity is given to children in dysentery and Root extract is given in fits and diabetes.
31.	*Hemidesmus indicus* R. Br. Asclepiadiaceae	Dudhi	The root paste mixed with water is given in small quantity to children in dysentery.
32.	*Indigofera tintoria* L. Fabaceae	Neel	Seed paste soaked overnight in clean water, strained in the morning through a clean cloth.
33.	*Jatropha curcas* Linn. Euphorbiaceae	Ratanjot	The stem is used as tooth brush to relieve toothache and gum swelling.
34.	*Jatropha gossypifolia* L. Euphorbiaceae	Kosoronda, Lal bherenda	Fresh latex applied on the cuts and wounds as antiseptic
35.	*Lawsonia inermis* L. Lythraceae	Mehandi	The whole plant is crushed and the paste is applied on Boils Burn, Headache, Piles, Rheumatism, Snake bite.
36.	*Lantana camara* L. var. *aculeata* (L.) Mold., Verbenaceae	Satyanashi, Baramashi.	Medicinal
37.	*Luffa acutangula* (L.) Roxb. Cucurbitaceae	Kadvi turai	Fine seed powder inhaled for cure of jaundice. Very clean juice of fruits is used as eye drops in conjunctivitis.
38.	*Madhuca longifolia* (Koenig) Mac.Bride var. *latifolia* (Roxb.) Chev. Sapotaceae	Mahua	A sweet dish made by boiling the flowers in milk and taken regularly for a long duration to cure male impotency. Bark paste applied externally on tonsils.
39.	*Martynia annua* L. Martyniaceae	Bichhu	The seed oil is applied in case of eczema.
40.	*Momordica dioica* Roxb. Cucurbitaceae	Paroda	The Seeds are used to remove Kidney stone, diabetes and fever.

41.	*Momordica charantia.* Linn. Cucurbitaceae	Karda	The juice of the fruits is given in diabetes till it is cured.
42.	*Mucuna pruriens* (L.) DC. Fabaceae	Kevach	Root paste applied externally on facial and paralytic places and root extract is given with water in empty stomach to sexually weak male.
43.	*Ocimum americanum* Linn. Lamiaceae	Tulsi	The leaves are crushed and mixed with salt, and eaten to increase the taste of tonge.
44.	*Ocimum basilicum* Linn. Lamiaceae	Kali tulsi	The leaf decoction mixed with saline water is used to keep away the snakes.
45.	*Phoenix sylvestris* Roxb. Arecaceae	Khajoor	The heartwood is given to ladies for increasing lactation after child birth.
46.	*Phyllanthus virgatus* Forst. Euphorbiaceae	Bhui aonla	Extract of the whole plant given in malaria.
47.	*Physalis minima* Linn. Solanaceae	Jangali Rasbhai	Two and a half leaves are eaten to cure fever and fruits are eaten to maintain body heat.
48.	*Senna tora* L. Caesalpiniaceae	Puwadia	The seeds are crushed with water and applied in eczema and hemicrania.
49.	*Plumbago zeylanica* L., Plumbaginaceae	Kala chirchita	The root and bark of chirchitta is used in the form of powder and decoction to treat piles, diarrhoea, cough, hardness of voice, diabetes, skin diseases, anaemia and filaria.
50.	*Solanum incanum* Linn. Solanaceae	Khatti ringdi	The seed powder is applied inside the mouth to cure toothache.
51.	*Solanum virginianum L.* Solanaceae	Kateli	The seed powder is applied inside the Asthma, Cough and Rhematisms.
52.	*Sterculia villosa* Roxb. Sterculiaceae	Kudawala	The root paste is given only and also applied on the inflamed parts of the body to reduce Swellings and Bark used in asthma.
53.	*Malinkara hexandra* Roxb. Sapotaceae	Khirni	The stem bark boiled with water is used for bathing to bodyache.
54.	*Tectona grandis* L. Verbenaceae	Sagon	Stem bark is chewed in the case of any mouth disease.
55.	*Trichosanthes cucumerina* Linn. Cucurbitaceae	Tambakasri	The fruits are kept in water for 12 hours and used to give bath to patients suffering from jaundice.
56.	*Tridax procumbens* Linn. Asteraceae	Phulani	The paste of whole plant is used to stop bleeding caused by any outer stroke.
57.	*Ventilago denticulate* Willd. Rhamnaceae	Ghurbel	The stem bark paste mixed with sugar is given two times in a day for cooling effect.
58.	Vitex negundo L. Verbenaceae	Nirgundi	Leaf juice is mixed with the seeds of Ajwain and is given (a teaspoon) in stomach disorders.
59.	*Xanthum strumarium* Linn. Asteraceae	Gokhru	The seed paste is applied in forehead to cure headache and decoction of whole plant is given for three days to treat liver disorder.
60.	*Zingiber roseum* Rosc. Zingiberaceae	Jangli adrak	The rhizome paste is applied on the body and the juice of the rhizome is given three times in a day to cure general fever.
61.	*Ziziphus mauritiana* Lamk. Zingiberaceae	Ber	Leaf paste or bark is applied over the place of scorpion sting.
62.	*Cissampelos pareira* L. var. *hirsuta* Buch-Ham. *ex* DC. Menispermaceae	Akandi, Kadu patha.	Powder of root and leaves of Kadu patha used to treat fever, diabetes, wound and also used for easy delivery.
63.	*Tinospora cordifolia* (Willd.) Miers. *ex* Hook. *f.* & Thoms Menispermaceae	Gulancha, Gulel, Gurbel	The stem, root and leaves of Gulancha is used in the form of juice and decoction to treat irregular fever, chronic fever, jaundice, vomiting, acidity and skin diseases.

64.	*Argemone mexicana* L. Papaveraceae	Pili katari	The root in the form of powder and latex of Bharband is used against small pox,
65.	*Capparis zeylanica* L. Capparaceae	Ardanda	Root and bark decoction is given to treat fever, stomach pain.
66.	*Cleome viscosa* L. Capparaceae	Hulhul	The seeds, leaves and root are used in the form of juice and powder to treat earache, arthritis, indigestion, abdominal pain.
67.	*Hybanthus enneaspermus* L. Violaceae	Ratanpuras, Varuna.	The root is used to treat urinary affection and bowel complaints of children.
68.	*Achyranthes aspera* Linn. Amaranthaceae	Ulta kata	Root use antidote in scorpion bite.
69.	*Aloe vera* Linn. Liliaceae	Gawarpatha	Leaf use in fractured bone. Leaves used for skin diseases, and digestion.
70.	*Asparagus racemosus* Willd. Liliaceae	Satawari	Tuber is given orally to nursing mothers for seven days early in the morning for lactation.
71.	*Biophytum sensitivum* Linn. Oxalidaceae	Badi Lajwanti	Plant extract is given to children orally in dysentery.
72.	*Boerhavia diffusa* Linn. Nyctaginaceae	Vishpatti	Leaves are chewed by the in scorpion bite.
73.	*Butea monosperma* Lam. Fabaceae	Dhauk, Palas	Seed is used cure asthma
74.	*Annona squamosa* L Annonaceae.	Sitaphal.	Leaf paste is applied to treat tumors and boils. Bark juice is given as an antidote for snakebite.
75.	*Calotropis procera* R. Br. Asclepiadiaceae	Aak, Madar	Latex is used antidote in scorpion bite.
76.	*Curculigo orchioides* Gaertn. Hypoxidaceae	Kali musli	Tuber powder is used to leucorrhoea, and rickets.
77.	*Curcuma amada* Roxb. Zingiberaceae	Jangli haldi	Tuber powder is given orally to cure rickets, infertility for men.
78.	*Cynodon dactylon* Linn. Poaceae	Doob	Whole plant extract is taken orally by the tribal's indigestion.
79.	*Dalbergia latifolia* Roxb. Fabaceae	Kala sisam	Leaf extract is taken orally by the tribals in dysentery.
80.	*Dioscorea bulbifera* Linn. Dioscoreaceae	Jangli mataru	Boil and made a powder of tubers use for child patient suffering from typhoid.
81.	*Euphorbia hirta* Linn. Euphorbiaceae	Dudhi, Choti dudhi	Plant paste is taken with water to cure dysentery and liver dieses.
82.	*Holoptelea tegrifolia* Planch. Ulmaceae	Bander buti	Leaf paste is applied locally to cure eczema.
83.	*Leucas aspera* (Willd.) Link. Lamiaceae	Chota halkushra	Whole plant is placed in hot water and the vapour is inhaled to treat migraine
84.	*Melia azedarach* Linn. Meliaceae	Bakain	Leaf paste is massaged on the body of children to cure rickets.
85.	*Phyllanthus emblica* Linn. Euphorbiaceae	Aonla, Aonwala	The fruit and seeds are used in the form of powder and juice to treat fever, loss of appetite, piles, worms, jaundice, cough, fainting, heart diseases and vomiting.
86.	*Phyllanthus fraternus* Webst. Euphorbiaceae	Bhui – amla	Plant extract is given orally once or twice in a day to children as febrifuge.
87.	*Solanum nigrum* Linn. Solanaceae	Bhutta kateli	Fruit cut in lengthwise, filled with purified butter is eaten in cough and cold.
88.	*Sterculia urens* Roxb. Sterculiaceae	Kullu	Gum paste is applied locally in eczema and taken orally urinary diseases

89.	*Phyllanthus urinaria* L. Euphorbiaceae	Lal bhuin	Whole plant extract is given to treat liver diseases.
90.	*Cocculus hirsutus* (L.) Diels Menispermaceae	Jamti ki bel, Til dhara	The root is used in the form of decoction to treat snake-poisoning.
91.	*Costus speciosus* (J.Koenig) Sm. Costaceae	Keo – kanda	The rhizome of Keo kanda is used in the form of juice and powder to treat worms and paralysis.
92.	*Abrus precatorius* L. Fabaceae	Gaungchi.	Whole plants Gaungchi used in the form of powder to treat dental caries, dandruff.

RESULTS AND DISCUSSION:-

The study was aim to explore the diversity of medicinal plant in urban area of district Chhindwara. Diversity the visit/survey 92 species of plant belong to 74 genera belong to 42 families were collected and identified urban area. Out of 92 species for curing various ailments such as sexual diseases, rickets, urinary diseases, skin diseases and ailments related to easy delivery, scorpion bite, digestive system, respiratory system, asthma and liver complaints.

ACKNOWLEDGEMENT:-

Authors are thankful to Prof. S. R. Manik Head department of botany Sant Gadge University Amrawati, M.H., Prof. T. R. Sahu department of botany Dr. H. S. Gour Central University Sagar, M.P. to help identification plant species and also thanks to Dr. S. Muzzafar, local people, forester, friends to cooperation during field studies.

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