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ETHNOMEDICINAL PLANTS USED FOR DENTAL CARE IN PENDRA, KONDAGAON AND KORBA DISTRICTS OF CHHATTISGARH, INDIA.

Dr. Meera Madhuri Mahant, (Assistant Professor of Botany), Gyanchandra Srivastava Government Post Graduate College Damoh (M.P.)

Abstract -

The paper deals with 30 plant species belonging to 28 genera and 20 families comprising 40 ethnomedicinal uses for dental care (toothache, tooth decay, pyorrhea, out smell and as tooth brush) by the different tribal and rural people in Pendra, Kondagaon and Korba districts of Chhattisgarh. The highest number of species recorded in the family Fabaceae (07). As medicinal plant species are on the verge of extinction. And lack of awareness and research on this group of plant in this area, people of this region are unaware of the wealth of this heritage. From biodiversity point of view, the vegetation survey is very much important for the research of database from this region which ultimately can be utilized for medicinal experts, plants explorers, researches etc. for their further studies. This survey provides a preliminary source of information of traditional medicinal practitioners in this areas. These uses were compared and cross-checked with the published ethnomedicinal data from Chhattisgarh, literature published in scientific journals and other states of the country and found that 12 uses of the referred plants had not been reported earlier. These plant species are arranged alphabetically with their botanical names, family and local name(s), followed by the method of uses for dental care along with field collection number(s) and uses cited by earlier workers.

Keywords -

Dental care, Toothbrush, Ethnobotanical uses, Traditional.

Introduction -

At present 90% people of the world are face to dental problems because when the people don't get relief from allopathic medicines, they go to Ayurveda and plants based medicines used for dental problems, and get relief them. Today's when we brush our teeth with hard bristles every day, then pits are formed in the teeth, there is a gap between the gum and the teeth. During this ethnobotanical survey of Pendra, Kondagaon and Korba districts of Chhattisgarh, a total number of 250 ethno medicinal plants were collected for the treatment of various diseases, disorders and ailments. Of these, 30 plant species were found Tobe used for

dental care like tooth ache, tooth decay, pyorrhea, foul smell and as tooth brush to clean the teeth by the tribal and local people. Dental caries, tooth decay and pyorrhoea are the common dental problems of the mouth observed in the area. Dental caries is a pathological condition of the teeth resulting in decalcification of the dentine or enamel and disintegration of the remaining organic material,often leading to loss of the teeth. Tooth decay is caused by intra oral factors, such as dental plaque of food and bacteria sticking to teeth, anatomy and position of teeth, dental appliances and restoration and lack of salivary flow and also by extra oral factors, such as high sugar intake, nutritional deficiency, soft foods and bottle feeding, etc. Accumulation of calculus (tartar) the scaly yellowish or brownish hard chalk like substances that forms at the gums around the teeth is the most common cause of gingivitis, which is the first stage of pyorrhea. The inflammation of the gum with foul smell is the main symptom of the pyorrhoea. Generally, the fresh tender sticks about 12-15 cm long and 0.5-1.0 cm in diam. are either collected directly from the plants or purchased from local vendors by the people of these districts.

It is locally known as **Mukhari or Datwan.** The stick crushed at one end by the molar teeth and made in to a brush. Flexible fibres of the crushed end of the stick are used for cleaning the teeth surface and teeth crevices. Unfortunately, these practices are fast vanishing and now exist only among the old people in the rural and interior areas. Therefore, the objective of the present investigation is to collect, identify and to document such information from rural and tribal areas of the Pendra, Kondagaon and Korba districts before their extinction. Subsequently, to find out new or less known uses for dental care by comparing the collected uses with already published literature. In recent past, a good number of research papers on various aspects of ethnobotany of CG including districts have been published by different workers. However only a single paper has been published from the state on nine plants which were mentioned in folksongs for dental care. A few papers have been published on plants used as toothbrush and for dental disorders from different researchers.

This study demonstrates the importance of traditional medicines in the treatment of dental problem and mouth infections in Pendra, Kondagaon and Korba districts of Chhattisgarh. It is essential for the health users to phytochemical demonstrate the effects of medicinal plants for their possible therapeutics applications. Hence, the future ethnomedicinal researchers or pharmaceuticals studies give due consideration on frequently reported medicinal plants in order to produce natural drugs that could be effective in toothache treatment and without side effect. These plant species are arranged alphabetically with their botanical names, family and local name(s), followed by the method of uses for dental care.

Study Duration -

For documentation of the available Flora, field surveys were conducted in 2020-2023. The data were collected from different parts of the Pendra, Kondagaon and Korba districts in different season (winter, summer & Rainy) for the preparation of comprehensive data base of dental care plants.

Objective of the study -

The tribal and local habitants people from this districts are normally collect seeds, roots, fruits, flowers, stem of local forest product and sell them to earn their livelihood. Also the diversity of plants species offer variety in family diet & contribute to household food security as well as increase dietary diversity. Further, it provides rural households with increase of income opportunities through their sale in the markets. In view of above, the present study was conducted to achieve the goal by covering the following objectives:

1. Identification of dental care plant species in Pendra, Kondagaon and Korba district.
2. Documentation of identified plants species in the study area.
3. Ethno botanical uses of plant species in other injuries.

Methods and Materials

The ethnobotanical survey was carried out in 60 villages and forest areas of Pendra, Kondagaon and Korba districts amongst the indigenous and local people during the years from 2020 to 2023. Frequent field trips were made to record the medicinal uses of wild plant species for various diseases, including dental disorders through personnel interview with the tribal and local people and further cross-checked with experienced Vaidya (Kaviraj). About 20 Vaidya (herbalists) were consulted and taken to the field for collecting voucher specimens and information about dental care medicinal uses of plants, their local names, parts used and methods of preparation with nature of treatment.

The voucher specimens of the plants collected were identified with the help of keys and botanical description described in regional Flora. After matching and verification with the authentic specimen housed in Central National Herbarium (CAL), these voucher specimens have been deposited in the Ethnobotanical Herbarium of Central Botanical Laboratory (CBL) Howrah. The latest botanical nomenclature has been checked with world renowned and widely accepted website *http://www.theplantlist.org*.

These plant species have been arranged alphabetically according to their botanical names, family and local name(s), followed by the method of preparation and mode of uses along with voucher specimen number (s) in parenthesis and uses cited by earlier workers (Table 1). These collected uses were compared and cross-checked with the published ethno-medicinal data from Chhattisgarh and other states of the country and the unreported or less known uses of the enlisted plants have been indicated with asterisk (*) mark.

Table (01) -: Lists of plants are arranged alphabetically along with Name of Species, Family, Local name(s), parts used, key ailment, traditional preparation followed by the method of usesfor dental care

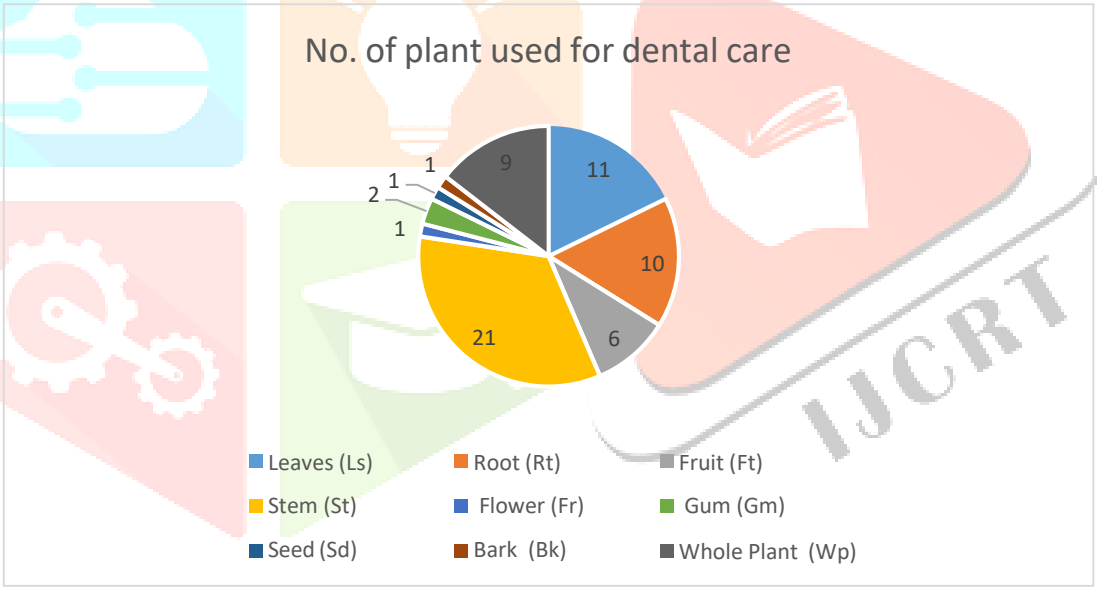
{**Symbols**: Ls=Leaves, Bk=Bark, Ft=Fruits, Gm=Gum, Rt=Root, Sd=Seeds, St=Stem, Wp=Whole plant, Fr=Flowers}

S. N.	Botanical name of plant	Family	Local name	Parts used	Key Ailment	Tradition Preparation
1	*Acacia nilotica* L.	Fabaceae	Babul	Ls, Gm, Fr, Sd, St	Toothache, pyorrhea, Fever	Stem used as tooth brush, dried flowers boil with water and used to gargle, leaf and root juice are taken orally to treat dental problem.
2	*Acacia*	Fabaceae	Akesia	Ls, St	tooth decay, pyorrhea	Stem used as tooth brush and leaves boil water used in gargle,
3	*Achyrant hes spera* L.	Amaranthaceae	Chidchida /Apamarg	Ft, St	tooth decay, pyorrhea	Stem and root used as tooth brush, Chronic diarrhea and dysentery
4	*Aelge marmelos* L. Correa.	Myrtaceae	Bel	Ls, St, Ft	pyorrhea Cough, fever,	Stem used as tooth brush, Fruits used as syrup, helpful for digestion
5	*Azadirach ta indica* A. Juss.	Meliaceae	Neem	Wp	pyorrhea Toothache,	Stem used as tooth brush, leaves and roots are boil with water and used for gargle
6	*Bauhinia purpurea* L.	Fabaceae	Kachnar	Ls, St,	tooth decay, pyorrhea	The fresh tender sticks (Stem) used as tooth brush
7	*Bamboo*	Poaceae	Baans	Wp	Jaundice, pyorrhea	Stem used as tooth brush and tender stem used as veg.
8	*Bombax ceiba*	Malvaceae	Semal	Wp,	Malaria, Stomach	Stem used as tooth brush, Roots used for gums injury.
9	*C. Cajan*	Fabaceae	Arhar	St, Ft	Toothache pyorrhea	The fresh tender sticks (Stem) used as tooth brush.
10	*Jatropha curcus* L.	Euphorbiaceae	Bhakaranda	Gm	tooth decay, pyorrhea	Roots decoction to rinse the oral cavity in toothache and Stem used as tooth brush
11	*Dalbergia sissoo*	Fabaceae	Shirish	St,	pyorrhea	The fresh tender sticks used as tooth brush.
12	*Eucalyptus globulus*	Papilionaceae	Nilgiri	Ls, St	tooth decay, pyorrhea	Stem used as tooth brush, leaves decoction to rinse the oral cavity in toothache
13	*Euphorbi atirucalli* L.	Euphorbiaceae	Sher	St	Toothache, pyorrhea, ulcers	Stem used as tooth brush
14	*Ficus religiosa*	Moraceae	Pipal	Wp	toothache, pyorrhea	Stem used as tooth brush
15	*Ficus Racemosa*	Moraceae	Gular	Ft, St	tooth decay, pyorrhea	Stem used as tooth brush, dried fruits are used as chin gum.

16	*Gmelina arborea* Roxb. Ex.Sm.	Convolvulaceae	Khamhar	Ls, St,	Skin diseases, pyorrhea	Roots decoction to rinse the oral cavity in toothache, Stem used as tooth brush.
17	*Lantana camara*	Verbenaceae	Baramasi	St	tooth decay, pyorrhea	Stem used as tooth brush. Seeds used as edible oil.
18	*Madhuca longifolia*	Sapotaceae	Mahua	Rt, St	tooth decay, pyorrhea t	Stem used as tooth brush,
19	*Mangifera indica*	Anacardiaceae	Aam	Wp	Toothache, pyorrhea	Stem used as tooth brush
20	*Neolamarckia* Roxb. Bosser	Rubiaceae	Kadamb	Bk, St	tooth decay, pyorrhea	Stem used as tooth brush, new born plant roots decoction to rinse the oral cavity in toothache
21	Pongamia pinnata	Fabaceae	Karanj	Gm, St	tooth decay, pyorrhea	Stem used as tooth brush
22	*Psidium guajava*	Mirtiaceae	Amrud	Ls, Ft, St	Cough, Toothache	Twigs as toothbrush; decoction of whole plants as health tonic; Leaves to relieve pain.
23	*Scheichera oleosa*	Convolvulaceae	Kosam	Ls, Bk, Ft, St	toothache, pyorrhea	Stem paste is applied on the affected part for cuts and wounds; Bk paste is applied locally on the affected portion of body.
24	*Smilax aspera* L.	Smilacaceae	Potar	St	Pyorrhea	The fresh tender sticks used as tooth brush
25	*Shorea robusta* Roth.	Dipterocarpaceae	Sarai / Salwa	Ls, Wp	tooth decay, pyorrhea	All parts of plant's usable but fresh tender stick used as tooth brush.
26	*Syzygium cumini*	Myrtaceae	Jamun	St	pyorrhea Asthma	Stem used as tooth brush, leaves boiled with rice and water are rubbed on body for rheumatism.
27	*Tamarindus indica*	Fabaceae	Imali	Wp	tooth decay, pyorrhea	Stem used as tooth brush and leaves used as veg.
28	*Terminalia arjuna* Roxb.	Combretaceae	Arjun	Ls, St Wp	anti-fungal, toothache	All parts of plant's usable but fresh tender stick used as tooth brush & Juice of leaves anti bactericidal.
29	*Vytex Nirgundo*	Lamiaceae	Nirgundi	Ls, St	Anti-choleric, pyorrhea	Leaves decoction to rinse the oral cavity in toothache, stem used as tooth brush, leaves past used for swellings.
30	*Ziziphus mauritiana*	Rhamnaceae	Ber	Wp, Sd	Tooth decay pyorrhea	Fresh tender stick used as tooth brush

Table (02) -: Lists of plant parts use arranged along with no. of plant & traditional preparationfollowed by the method of uses for dental care

S. N.	Plant parts used	No. of plant used for dental care	Traditional preparation
1	Leaves (Ls)	11	Boiling the leaves and rinsing them with filtered water provides relief from pyorrhea.
2	Root (Rt)	10	Roots decoction to rinse the oral cavity in toothache and Stem used as tooth brush, by brushing the teeth with powder of root charcoal and salt, the teeth do not become yellow.
3	Fruit (Ft)	06	Robbing the powder of dried peel of the fruits on the teeth strengthens the gum and teeth.
4	Stem (St)	21	fresh tender stick used as tooth brush & daily brushing helps prevent cavities and pyorrhea.
5	Flower (Fr)	01	Boiling the flowers and rinsing them with filtered water provides relief from pyorrhea & prevent frim cavities.
6	Gum (Gm)	02	Soaking the gum in water and applying it on the gums reduces the swelling & pain of gums.
7	Seed (Sd)	01	Powder of seeds applying the gap between teeth for pain relief.
8	Bark (Bk)	01	Bark paste with filtered water provides relief from pyorrhea.
9	Whole Plant (Wp)	09	Mostly the young stem and roots are used as a brush for cleaning the teeth.



Results and Discussion -

It is revealed that 30 plant species with 40 Ethno medicinal data were collected from the area for dental care during the study. Of these, stem twigs are mostly used, followed by no. of 30 stem (St), 11 leaves (Ls), 10 root (Rt) and 09 whole plant (Wp) for dental care in the studied area, from table no. (2). As far as method of preparation and mode of uses is concerned, 30 used as tooth brush, 10 as decoction, 06 as fresh, 06 as powder, 01 as paste, and 01 as ash for curing the disorder. The highest number of species recorded in the family Fabaceae (07), from table no. (1). Although, some plant species reported here for dental care are known from different parts of the country including Chhattisgarh, but the scrutiny of the relevant literature reveals that ethnomedicinal uses of 10 plants are not recorded earlier. It is also analysed that out of 40 ethnomedicinal data for dental care, 13 were collected from different localities of the Korba district, 09 from the Pendra and 08 from Kondagaon district. The plant brush seems more safe and hygienic as used fresh one in every

occasion.

Concurrently, other oral and stomach diseases might be cured as some of plant extracts goes into their internal system. The present ethno-medicinal investigation also revealed that the tribal people of Odisha have great faith in their traditional system of medicine and still depend upon natural plant resources to cure their various ailments. Simultaneously, it is observed that new generation is almost ignorant or least interested in ancient traditional method of healing. Therefore, it is felt that documentation of plant related indigenous knowledge throughout tribal area needs to be completed along with creation of awareness among the youngsters, so that rapid erosion of the valuable knowledge about plant resources can be checked to a certain extent. The data collected on dental protective plants needs to be systematically screened for verification of tribal claims and Tender stems of *Shorea robusta* Gaertn. & *Acacia nilotica* L., are being sold in market for toothbrush at railway station of Pendra Road in the early morning; SINGH et al. "Ethno-medicinal used for dental care".

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