Plant Archives Vol. 22, No. 1, 2022 pp. 300-303 e-ISSN:2581-6063 (online), ISSN:0972-5210

Plant Archives

Journal homepage: http://www.plantarchives.org
DOI Url : https://doi.org/10.51470/PLANTARCHIVES.2022.v22.no1.047

DOCUMENTATION ON ANTIDIABETIC ETHNOMEDICINAL PLANTS FROM SATPUDA FOREST REGION OF EAST KHANDESH, INDIA

S. A. Chaudhari[1], Ashok N. Patil[2] and R. M. Bagul[3*]
[1]Dept. of Botany; Anna Saheb G.D. Bendale Mahila Mahavidyalya, Jalgaon, 425 001, M.S. India
[2]Dept. of Botany, Arts, Science & Commerce College, Junnar, Pune. India
[3]Post Graduate Research Center, Dept. of Botany, MGSM's Arts, Science & Com. College, Chopda, 425107. India.
*Email: drrmbagul@gmail.com

(Date of Receiving : 18-01-2022; Date of Acceptance : 28-03-2022)

ABSTRACT

Study covers the area falls in Jalgaon district situated between 20^0-17' and 21^0-26' north latitude and 74^0-47' and 76^0-28' east longitude. The study is confined to first two regions only and more specific to Satpuda mountainous ranges of India. Present study reveals about total no. of medicinal plant families '82 'composed of pteridophytes (3), Dicots (66), and monocots (13). The genera are 234, spread over pteridophytes (3), dicots (209) and monocots (22). Similarly, Species are 270 out of which pteridophytes are (3), dicots (244) and monocots (23). The most Prominent & common method of administration of medicinal plants is oral 252(56.00%) followed by external 109(24.22%), internal applications are 49 (10.08%), poultice 31 (6.88%), smoking 3 (0.66%) and inhalation 4 (0.88%) and steam bath 2 (0.44%). The present paper highlights 15 ethno medicinal plants used as antidiabetic with reference to Vernacular and Botanical name, part(s) used, quantity, mode of administration and dosage.

***Keywords*:** Antidiabetic, Ethnomedicinal Plants, Satpuda, East Khandesh.

Introduction

East Khandesh Satpuda lies on northern part of Jalgaon district. It is rich in vegetation composed of humid and many semievergreen species apart from dry deciduous ones. Studies on medicinal plants of the area are lacking except few sporadic references like Karnik, 1966; Bhamare, 1989; Rajput & Yadav, 2000; Yadav & Patil, 2001, Bagul, R.M. and Yadav S. S. (2003 a & b), Bagul R.M, &. Yadav S.S and B.D. Garud; (2006), Bagul R.M. & Yadav, S.S, 2007;

Most of the countries worldwide has compiled the information on traditional medicines of centuries old. In India ancient drugs have been mentioned in Rigveda which is about 4000-5000 B.C. old. Atharva Veda also described about 2000 medicinal plants. Well documented account on properties of medicinal plants are found in Sushruta, Samhita of 1000 BC. Indian Materia-medica accounts about 3500 medicinal plants. However systematic work on traditional medicines have begun in 20^{th} century only. Plants used by primitive people to affect fertility (Lal & Lata, 1980), Medicines for obstetrics and gynaeological disorders (Tiwari, etal, 1982), Plants for antifertility, conception and abortion (Tarafdar, 1983, 96), Plants used for influenza (Menon, 1919), Leucoderma (Biswas, 1956), Leprosy (Das & Sharma, 1958, 59), Eye disease (Pal, 1973), Rheumatism and Leucoderma (Hemadri, 1981), Plants used for skin diseases (Khan and Chaghatai,1982), Ethnobotanical records on infectious diseases (Saxena & Vyas, 1981) etc.

Materials and Methods

Present study is based on the field work and literature survey through systematic planning and meticulously exploring the areas for gathering various information related to medicinal uses of plants in diabetes, during outgoing all the information collected were noted in field book. Pertinent attention was paid to habit, habitat, distribution pattern, dosages and mode of administration. As far as possible correct information was confirmed by repeated queries at different places. Specimens collected during the field work are processed for herbarium as per the customary methods suggested by Jain & Rao 1977. Specimens thoroughly studied for correct identification with the help of standard floras viz. Flora of Presidency of Bombay (Cook, 1957 Repr.ed.), Flora of British India (Hooker, 1872-1897), B.S.I. Flora of Maharashtra State, Vol. I.II. & III. (Edited by Sharma *et al*., 1996; Singh & Karthikeyan, 2000; Singh & Laksh 2001). The identification was confirmed by authentically identified species at B.S.I. Pune. Herbarium sheets were neatly labeled and deposited in the herbarium of Department of botany, A.S.C. College Chopda. Prescriptions given in the form of powder, paste, juice, cold infusion, hot infusion, decoction, oil, pills, artificial salts & alkali (D'Souza, 1993) were also recorded. The medicines are given generally by oral or external applications.

Following are the methods for the preparation of herbal drugs noted :

(1) Powder (Churna)

Plant is washed thoroughly, then dried in a shade, pounded and strained through a clean cotton cloth. Powder is collected into small bottles and packed properly.

(2) Paste (Kalka)

Leaves washed & grinded into a fine paste & applied on affected parts of the body.

(3) Juice (Rasa)

Leaves washed, grinded to paste, fine through to hold as a ball placed in the wet cloth. Squeezed the paste and then juice is collected into the bottles.

(4) Cold Infusion (Him)

Bark of the trees were peeled off by discarding outer most layer. Then crushed into the pestles by adding water and kept for 24 hrs. Filtered through the cloth & filtrate used as cold infusion.

(5) Hot Infusion (Phant)

Fresh bark of the tree is collected (as outer most layer) and crushed into the pestles. The crushed material is then added into the boiling water and kept to cool-strained and filtered through the cloth. This filtrate is used as infusion.

(6) Decoction (Kadah)

Leaves, roots and stems were washed & chopped into pieces. One cup of chopping'sis added into four cups of water. It is then boiled to evaporate till ¼ part is obtained. It is Strained and collect into a cup as decoction commonly used in tribal area.

(7) Artificial Salts (Lavan)

In an earthen pot stacks of plant material and salt in equal proportions are kept in layers. Cloth is smeared by applying mud on it. A dried mud-covered cloth is tied over the mouth of the earthen pot & placed in a deep pit covered with cow dung cakes. These cakes were burnt to get the artificial salt inside the pot. Cooled and salt is removed to filled in bottles.

(8) Oil (Telam)

Seeds are cleaned, crushed and wrapped in the leaves of *Butea monosperma* and steamed in cooker. Unwrapped it to become cool. Squeezed it to get oil from the seeds. Oil is collected in bottles used for massage.

(9) Pills

1 kg leaves boiled in 4 liters of water, till ¼ vol remained. Strained to obtain thick mass on fire. A gram sized pills prepared & dried in open sunlight.

Results & Discussion

The medicine men generally called bhagats or witch doctors still have a very strong hold on the tribal population. So far, no proper attempts have been made to explore the possibilities to get the knowledge from these medicine men. To achieve the goal of "Health for all by 2000 AD" it is necessary, atleast for the developing countries to involve actively in the services of traditional medical practitioners. Recently Govt. of Maharashtra appointed these people as 'Pada' workers (Temporary Health Services) in the remote areas to take care of health of their communities on daily wages.

Nearly 60% of population in Satpuda is tribal and remaining 40% are of lower economic categories. They depend completely on tribal medicine men for their treatment. Most of the medicinmen were middle aged. The tribals have deep faith in these medical practitioners. Women were also found to be practicing in remote parts of the forests.

The common ailments met within the tribal people are minor diseases like, general weakness, nutritional deficiencies, respiratory problems, malarial fevers, urinary complaints, skin diseases, gynecological troubles, etc. For all every herbal medicine is available in the forest which are used effectively. Diseases like cancer, AIDS, tuberculosis, typhoid's and tetanus were reported rarely from these communities.

The most prominent and commonly used Antidiabetic medicinal plants are mentioned in the Table 1. From the table it can be observed that the drug preparation and dosages are very accurately used by the tribal medicine men. It was also found during the study that these herbal medicines have no side effects and are very effective in the treatment of various diseases. It still holds good reputation among tribals & inhabitants of the area. There is need to brought these ethnomedicines under cultivation in a systematic manner for the conservation of biodiversity by utilizing traditional knowledge of tribals to fulfil & meet demands from drug markets. There is also need to evaluate pharmaceutically the antidiabetic claim reported for these plants.

Table 1: Showing Antidiabetic plants with reference to Vernacular and Botanical name, part(s) used, quantity, mode of administration and dosage.

Sr. No.	Vernacular name	Botanical name	Family	Part(s) used	Quantity	Mode of administration	Dosage
1	Ashok	*Polyalthia longifolia (Sonn.) Thwaites*	Annonaceae	Bark	100g	50 g dried bark powder mix with 500 ml water	100-150 ml daily early in the morning
2	Medsing	*Dolichandrone fulcata (Wall ex. DC)*	Bignoniaceae	Dried Leaves	10-15 g	Leaf powder mixed with '5' g Trigonella seed powder	Given daily with fresh water for 1-2 months
3	Palas	*Butea monosperma (Lam)Taub*	Fabaceae	Gum	5-10 g	Infusion made with hot water & cooled.	1-2 teaspoonful daily twice a day
4	Gulvel	*Tinospora cordifolia (Willd)Miers*	Menispermacea e	Stem	3" size pieces (Two	Infusion made with water from stem &	2 cups for '7' days

					or three)	taken orally.	
5	Bija	*Pterocarpus marsupium. Roxb*	Fabaceae	Piece of Wood	10 g of powder	Dry wood powder mix with one glass of water & kept whole night.	Filtrate, 1 glass daily once for '15-30' days.
6	Rankela	*Ensete superbum (Roxb)Chessman*	Musaceae	Central Core(stem)	5-10 gm	Fresh chopped pieces of stem mixed with water whole night & taken orally early in morning.	Daily '1' glassful '15' days
7	Jambhul	*Syzigium cumini (L) Skeels*	Myrtaceae	Bark	2" X 2" piece	Infusion made with water & taken orally	1 cup Daily for 2-3 days
8	AIN	*Terminalia alata Roth*	Combrataceae	Bark & fruit	10 g of powder	Dry bark powder mix with one glass of water & kept whole night.	Filtrate, 1 glass daily once for '15-30' days.
9	Kadhi patta	*Murraya koenigii(L) spreng.*	Rutaceae	Leaf	10-15 g	Leaf powder mixed with '5' g Trigonella seed powder	1-2 gm leaf powder Given daily with fresh water for 1-2 months
10	Vedi babhul	*Parkinsonia aculeataL.*	Caesalpiniaceae	Root	10 g of powder	Dry bark powder mix with one glass of water & kept whole night.	Filtrate ,1 glass daily once for '15-30' days.
11	Indrayan	*Citrullus colysynth (L)Schrad*	Cucurbitaceae	Seeds	50 g of dried seed powder	50 g of dried seed powder mix with 1 litre of water.	1 glass full of water daily once early in the morning for '15-30' days.
12	Mircha kand	*Corallocarpus epigaeus (Rottler)Hooker.f*	Cucurbitaceae	Tuber	10 g of dried seed powder	10 g of dried tuber/root powder mix with 1 glass of water.	1 glass full of water daily once early in the morning for '15-30' days.
13	Sadafuli	*Catharanthus roseus(L)G. Don*	Apocynaceae	Flower	20 gm of dried flowers	Infusion made with water & taken orally	1 cup Daily for 2-3 days
14	Kadu Chirayat	*Andrographis paniculate(Burm.f.) Nees*	Acanthaceae	Leaf	10-15 g	'5'g Dried Leaf powder	1-2 gm leaf powder Given daily with fresh water for 1-2 months
15	Gombo	*Gompherena globoseL.*	Amaranthaceae	Leaf	10-15 g	'5'g Dried Leaf powder	1-2 gm leaf powder Given daily with fresh water for 1-2 months

References

Bagul, R.M. and Yadav, S.S. (2003a). Tribal Medicine for Jaundice from East Khandesh, Satpuda, *Geobios*, 30: 295-296.

Bagul, R.M. and Yadav, S.S. (2003b). Antivenomous Traditional Medicine from Satpuda, East Khandesh, *Plant Archives*, 3(2): 319-320.

Bagul, R.M. and Yadav, S.S. and Garud, B.D. (2006). Medicinal Plants of East Khandesh Satpuda with Reference to Their Threat Status and Uses. *Plant Archives*, 6(1): 357-358.

Bagul, R.M. and Yadav, S.S. (2007). Threat Assessment of Some Medicinal Important Plants of Satpuda Forest East Khandesh: A Conservative Approach*, Plant Archives* 7(1): 367-370.

Bhamare, P.B. (1998). Traditional Knowledge of Plant for Skin Ailments of Dhule and Nandurbar District, Maharashtra (India), *J. Swamy Bot, Cl.*, 15: 81-83.

Biswas, K. (1956). Vegetable drugs in the treatment of Leucoderma. *J Asiat Soc.,* 22:61-66.

Cook, Th.1958; (Repr.ed.) Flora of British India. 7 Vols, Reev and Co. Ltd. England.

Das. M.B. and Sharma, T.C. (1958-59). Traditional methods of treatment of Leprosy among Mikris Adibasi 3: 25-30.

D'Souza, M. (1993). Tribal Medicine. Soc. for Promotion of wastelands development, New Delhi pp 33-58.

Hemadri, K. (1981). Rheumatism: Tribal Medicine Ancient *Sci. Life,* 1: 117-120.

Hooker, J.D. (1872-1897). The Flora of British India. Vol. I-VII London

Jain. S.K. and Rao R.R. (1977). A Handbook of Field & Herbarium Methods Today & Tomorrow Printers & Publ, New Delhi.

Karnik, C.R. (1966). Some Medicinal Plants from Satpuda Mountains, *Indian Forester*, 92: 173-183

Khan, S.S. and Chaghatai, S.A. (1982). Ethnobotanical studies afflictions. *Ancient Sci. Life*, 1: 236-238.

Lal, S.D. and Lata, K. (1980). Plants used by the Bhat community for regulating fertility *Econ. Bot.,* 34: 273-275.

Menon, C.K. (1919). Embelia ribes: A medicine for influenza Indian for 45: 210.

Pal, D.C. (1973). Tribal Folklore about some plants associated with eye treatment. *Folklore,* 14 : 446-447.

Rajput, A.P. and Yadav, S.S. (2000). Medico-Botanical and Phytochemical Studies on Medicinal Plants of Dhule and Nandurbar Districts of Maharashtra State. *J. Phytol. Res*., 13(2): 161-166.

Singh, K. and Laksh (2001). B.S.I. Flora of Maharashtra State Vol. I, II, III.

Saxena, A.P. and Vyas, K.N. (1981). Ethnobotanical records on infectious diseases from tribals, Banda District, *J. Econ. Tax. Bot*., 2: 191-194.

Tarafdar, C.R. (1983a). Ethnogynaecology in relation to plants, Part-I Plants used for antifertility and conception. *J. Econ. Tax. Bot*., 4: 483-489.

Tarafdar, C.R. (1983b). Ethnogynaecology in relation to plants, Part-I Plants used for antifertility and conception. *J. Econ. Tax. Bot*., 4: 507-516.

Tiwari, P.V. Misra, D.N. and Chaturvedi, C. (1982). Medicinal preparation used for obstetrics &gynecological disorders in medieval India. *Nagarjuna*, 25: 124-129.

World Health Organization 1978; Traditional Medicine, Geneva, WHO.

Yadav, S.S. and Patil, S.H. (2001). Traditional Medicines and Healthcare System of Tribals of Satpuda Region, Maharashtra State. *Plants Archives*, 1(1 &2): 111-118.