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RESEARCH ARTICLE

INDIGENOUS KNOWLEDGE OF MEDICINAL PLANTS AMONG THE TRIBAL POPULATION OF DANG-SURGANA FOREST OF WESTERN GHATS, INDIA

***Palwe, S. D.**

Department of Botany, M.G.V.'s Arts, Science and Commerce College Surgana, Tal. Surgana, Dist. Nashik, Maharashtra, India – 422211

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ABSTRACT

An ethnobotanical survey was conducted to document the ethnomedicinal plants which are used by tribals such as Konkani, Mahadeo Koli, Charans and Vanjaris in Dang-Surgana forest ranges, which forms a part of the northern tip of Western Ghats region of Ahwa and Nashik District, Gujrat and Maharashtra, India. In the present study, 52 species of plants included in 48 genera and 36 families which are being potentially used by the tribals for treating various diseases are documented. The collection and documentation of their experimental learning and conventional strategies dependent on the customary utilization of plants is no uncertainty a surprising advance keeping in view the blurring society and ethnic customs. More endeavors ought to be made to verify and assess the efficacy of these restorative plants and formulations utilized by these tribals.

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INTRODUCTION

Ethnomedicine means plants, animal formulations, and minerals utilized by inborn tribals of a specific district or nation for therapeutic purposes other than those referenced in traditional surges of the individual societies are standardized (Savnur, 1993). Innate medication or traditional prescription assumes an imperative job in the primary healthcare of tribal just as rustic individuals (Rajiv, 1998; Patil, 2008). The traditional drug which is broad all through the world has been perceived by the World Health Organization (WHO) as a fundamental building block of essential human health services (Bannerman, 1982).World Health Organization has expressed that 80% of the total populace relies upon traditional prescription for its essential human health services and has turned out to be key for its survival (Hiremath and Taranath, 2013). The tribals and ethnic people groups are thoroughly relying upon the neighborhood and conventional drug framework for their medicinal services since they are living in remote forest territories, where the healing center and other modern medical facilities are not accessible (Mohan *et al.*, 2008). They utilize their conventional information for restorative reason and the learning is gone through oral correspondence from age to age (Ammal and Prasad, 1984; Prasad *et al.*, 1996). Today, enthusiasm for conventional prescription has been expanding and ethnobotanical examines have been started to investigate the information base from different ancestral groups the nation over (Pei, 2001; Jain and Patole, 2001; Sandhya *et al.*, 2006; Ignacimuthu *et al.*; 2006; Ragupathy and Newmaster, 2009). Since enthusiasm for traditional prescription has been expanding the world, ethnobotanical ponders have picked up conspicuousness to investigate the conventional learning, especially in developing countries (Joshi and Joshi, 2000). In this manner, the accumulation of ethnobotanical data and documentation of traditional information has picked up noticeable quality from the point of view of medication improvement (Ragupathy *et al*., 2008). Ethnomedicinal thinks about having offered monstrous extension and open doors for the advancement of new medications (Sivaperumal *et al*., 2010). The specialty of herbal healing has profound root in Indian culture and old stories. Therapeutic plants have been assuming an essential job in the survival of the ethnic networks, who live in remote villages and woods. The customary tribal drug, which is for the most part undocumented, has been passed on orally starting with one age then onto the next. Extensive segments of the Indian populace still depend on customary herbal medication (Dubey *et al*., 2004). Indeed, even today, the vast majority of the woods tribals are relying upon local traditional mending frameworks for their essential human health services. Their dependability on recuperating plants is still more for the general population occupying the profound backwoods of the Western Ghats in India, where it is troublesome for them to get current therapeutic facilities for their everyday issues. Therapeutic plants pulled in impressive worldwide interests as

Corresponding author: **Palwe, S. D.**
Department of Botany, M.G.V.'s Arts, Science and Commerce College Surgana, Tal. Surgana, Dist. Nashik, Maharashtra, India – 422211.

of late. Because of different human exercises, for example, deforestation and other formative exercises, both regular vegetation and conventional culture in India are quick declinings. There is a critical need to record all ethnobotanical learning accessible with various ethnic and old stories networks before their conventional culture is totally lost. Ethnobotanical information has been reported from a different piece of Indian sub-continent (Das and Tag, 2006; Singh, 2004). There is no past report in the records of ethnobotanical knowledge from Konkani, Mahadeo Koli, Charans, Vanjari clans of Dang-Surgana backwoods of Western Ghats. An endeavor has thusly been made to gather and report the folk information from these tribals, neighborhood herbal healers and proficient elder individuals of various castes and communities dwelling in the zone of Dang-Surgana forests of Western Ghats.

MATERIALS AND METHODS

An ethnobotanical study was led amid the month from January to December 2018 to gather data on conventional uses of therapeutic plants utilized in the preparation of herbal medicines by tribals such as Konkani, Mahadeo Koli, Charans and Vanjaris colonized in the Dangs Forest ranges which forms a part of the northern tip of Western Ghats region of Ahwa (Dang) District, Gujrat and Surgana, Nashik District, Maharashtra, India. The forests of this division constitute the northern tip of the Western Ghats forests. Various types of forests from luxuriant tropical wet evergreen forests to western thorn scrub forests occur in this division because of diverse locality factors (edaphic and biotic) varying rainfall from 165 to 290 mm and at an altitude of about 900.0 m (2,952.8 ft).

The general methodology for the gathering of information with respect to the utilization of plants to treat different diseases by the tribals was pursued as portrayed by (Martin, 1950; Borthakur, 1976; Bellamy, 1993). The system involved individual contact with village medication men (tribal medicinal experts), herbal medications experts and by personal observation on the utilization of prescriptions. When recording the names of plants, forest visit was made with the informants for identification of the specific plants. Information regarding ailments, plants, plant part(s) used, formulation along with dose and duration, etc. gathered from the tribals have been documented. Vernacular names of the plants were obtained from the informants and the plant specimens were collected, prepared herbarium and identified with the help of regional floras (Hooker, 1872-1897; Suryanarayan, 1968; Lakshminarasimhan and Sharma, 1991; Shah, 1978) and finally confirmed by comparing with the authenticated specimens in the Herbarium of Botanical Survey of India (Western Circle), Pune, Maharashtra, India. The voucher herbarium specimens were numbered and deposited in the Department of Botany, Savitribai Phule Pune University Pune, Maharashtra, India.

RESULTS AND DISCUSSION

The present investigation concentrated basically on the plant species utilized by the tribals for primary healthcare needs as reported by the informants/conventional healers. The revealed plants were orchestrated by their scientific name, family, vernacular names (as recorded amid the field work), parts utilized, therapeutic uses, and mode of administration. The traditional knowledge of tribal communities of Dang-Surgana forest has high ethnobotanical significance.

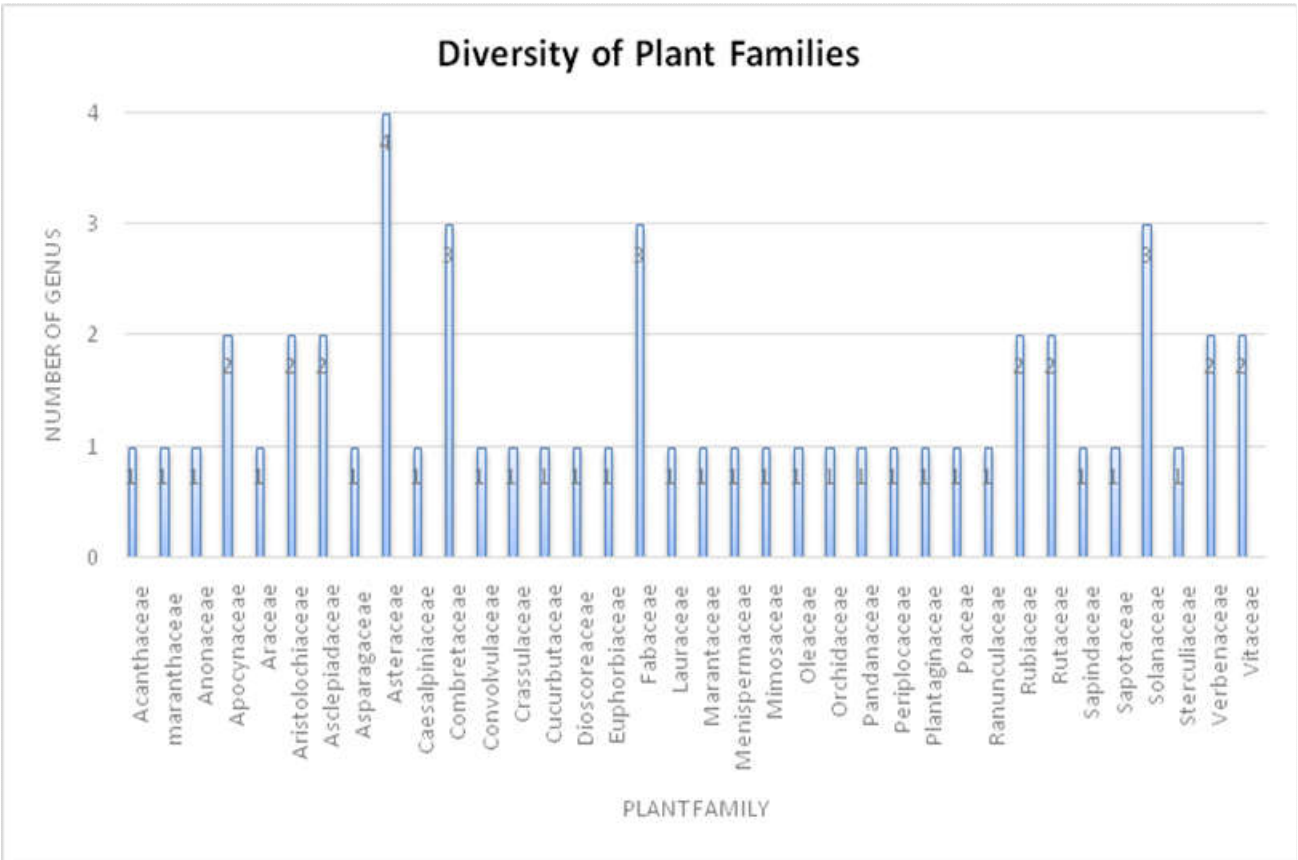

Figure 1. The diversity of plant families used by tribals of Dang-Surgana Forest of Western Ghats

Table 1.

Sr. No.	Scientific Name	Family	Vernacular Names	Parts Used	Mode of Administration
1.	*Abrus precatorius* L.	Fabaceae	Gunja	Leaves	Leaf decoction in the affected portion of inflammation.
2.	*Acacia sinuata* (Lour.) Merr.	Mimosaceae	Shikai, Shikakali	Pods	Powdered pods are used in all cases of skin diseases.
3.	*Achyranthes aspera* L.	Amaranthaceae	Aghada	Roots	Root powder used for cholera
4.	*Justicia adhatoda* L.	Acanthaceae	Adulsa	Leaves and Roots	Leaf and root decoction are taken internally for asthma and cough.
5.	*Allophylus serratus* (L.) Juss.	Sapindaceae	Tipin	Leaves	Leaf paste with turmeric is applied for fracture and sprains.
6.	*Amorphophallus paeoniifolius* (Dennst.) Nicol.	Araceae	Suran	Corm	Corm pieces are fried in ghee and used internally in the treatment of piles.
7.	*Annona squamosa* L.	Annonaceae	Sitaphal	Seed	Seed powder is orally given with hot water to induce abortion.
8.	*Aristolochia bracteolata* Lam.	Aristolochiaceae	Gandhani	Leaves	Leaf paste is applied on the affected portion in the treatment of inflammation and boils.
9.	*Aristolochia indica* L.	Aristolochiaceae	Badak Vel, Arkmula	Leaves	Leaf juice is mixed with rhizome juice of *Zingiber officinale* is used for blood clotting.
10.	*Artemisia nilagirica* (C.Clarke) Pamp.	Asteraceae	Kirmani, Dhor Davna	Leaves nd Flowers	Inhalation of smoke from the flowering twigs is effective in the treatment of asthma and bronchitis.
11.	*Asparagus racemosus* Willd.	Asparagaceae	Shatavari	Roots	A root decoction is used as a healthy tonic.
12.	*Butea monosperma* (Lam.) Taub.	Fabaceae	Palas	Seeds	Seed paste is applied to various skin diseases.
13.	*Caesalpinia bonduc* (L.) Roxb.	Caesalpiniaceae	Sagargota	Seeds	Roasted seed powder (20 g) is orally given daily twice daily for diabetic patients.
14.	*Cinnamomum verum* J.S. Presl.	Lauraceae	Dalchini	Root	Root bark powder mixed with milk and sugar for a cough.
15.	*Cissus javana* D.C.	Vitaceae	Nag Vel	Whole Plant	Stem paste is orally given daily after food to regularize menstruation.
16.	*Cissus quadrangularis* L.	Vitaceae	Vedhari, Hadjod	Stem	Plant paste is mixed with egg white is applied to the affected portion in the treatment of fractures.
17.	*Clematis gouriana* Roxb.	Ranunculaceae	Shend Vel	Leaves	A leaf decoction is mixed with water for rheumatism bath.
18.	*Cymbopogon citrates* (DC.) Stapf.	Poaceae	Gavti Chaha	Leaves	Oil prepared from leaves used for a toothache.
19.	*Dioscorea pubera* Blume.	Dioscoreaceae	Kadu Kand	Rhizome	Cooked tuberous rhizome is for colic pain.
20.	*Eclipta prostrata* L.	Asteraceae	Bhangaru	Whole Plant	Plant extract is used for the treatment of dandruff.
21.	*Emilia sonchifolia* (L.)DC.	Asteraceae	Kathari, Dudhiyo	Whole Plant	Plant paste with salt is applied both inner side and outer side of the throat in the treatment of tonsillitis.
22.	*Erythrina variegata* L.	Fabaceae	Pangara	Leaves	Leaf decoction is used for malaria.
23.	*Gymnema sylvestre* (Retz.) R.Br.	Asclepiadaceae	Madhi	Leaves	Leaves are eaten for diabetes.
24.	*Hemidesmus indicus* (L.) R.Br.	Periplocaceae	Anantmul	Roots	A root decoction is taken internally for the treatment of leucorrhoea and diabetes.
25.	*Ichnocarpus frutescens* (L.) R.Br.	Apocynaceae	Sarva	Roots	Root juice is used internally for the treatment of anemia and kidney stone.
26.	*Ipomoea marginata* (Pesr.) Verdc.	Convolvulaceae	AamtiVel	Roots	Root decoction is taken internally for urinary infection.
27.	*Jasminum grandiflorum* L.	Oleaceae	Jai	Leaves	Leaf juice is mixed with coconut flower juice is dropped into nose for the treatment of nasal bleeding.
28.	*Kalanchoe pinnata* (Lam.) Pers.	Crassulaceae	Panphuti	Leaves	Leaf juice is an effective medicine for the treatment of dysentery and cholera.
29.	*Luffa cylindrica* (L.) Roem.	Cucurbutaceae	Ghada ghosali	Leaves	Leaf paste is used externally in the treatment of leprosy.
30.	*Madhuca longifolia* (Koening) Mac.	Sapotaceae	Mahu	Gum	The gum obtained from tree trunk is used to cure boils.
31.	*Maranta arundinacea* L.	Marantaceae	Tavkira	Rhizome	Rhizome powder along with milk is used in the treatment of urinary complaints.
32.	*Mussaenda frondosa* L.	Rubiaceae	Sarvadi	Leaves	Leaf juice is used as a poultice for dandruff.
33.	*Pandanus odoratissimus* L.	Pandanaceae	Kevda	Leaves	Oil prepared from younger leaves is smeared in the burned portion in the case of burns.
34.	*Physalis angulata* L.	Solanaceae	Popti	Leaves	Leaf paste is applied at the inflated portion in case of Inflammation.
35.	*Plantago ovata* Forsk	Plantaginaceae	Isabgol, Gihoda	Seeds	Seed decoction is given to women in the morning to prevent abortion.
36.	*Pterospermum canescens* Roxb.	Sterculiaceae	Much kand	Leaves	Leaf paste is applied on the affected portion for the treatment of the fracture.
37.	*Rauvolfia serpentina* (L.) Benth ex kurz.	Apocynaceae	Sarpgandha	Roots	Root decoction is orally given in case of a poisonous bite.
38.	*Ricinus communis* L.	Euphorbiaceae	Erand	Seeds	Seed oil is given orally for constipation.
39.	*Rhynchostylis retusa* (L.) Blume.	Orchidaceae	Sitechi veni	Leaves	Leaves are slowly heated and juice is dropped into ears to cure ear pain.
40.	*Rubia cordifolia* L.	Rubiaceae	Manjita	Roots	Root paste mixed with rhizome paste of turmeric is applied to the affected portion in the treatment of skin diseases.
41.	*Ruta chalepensis* L.	Rutaceae	Satapa, Gundra	Leaves	Leaf juice is used for smallpox and worm infection.
42.	*Solanum violaceum* Ortega	Solanaceae	Chinchurdi	Roots	Root paste is applied for poison.
43.	*Spilanthes calva* DC.	Asteraceae	Akkalkada, Pipulka	Flower	Chewing of flower buds during a toothache
44.	*Tectona grandis*, Linn.	Verbenaceae	Sag	Bark, Leaves	A decoction of bark and Juice of leaves is useful in leprosy.
45.	*Terminalia arjuna* (DC)W&A	Combretaceae	Arjun Sadada	Bark	A bark decoction is given orally to check cardiac problems.
46.	*Terminalia bellirica*, Roxb.	Combretaceae	Bedha	Bark	Infusion of bark is used as the treatment of leprosy.
47.	*Terminalia chebula* Retz	Combretaceae	Hirda	Fruit	A decoction of fruit orally given to treat asthma.
48.	*Tinospora cordifolia* (Willd.) Hook.f.& Thomson	Menispermaceae	Gul Vel	Stem	Stem extract is applied externally to reduce joint pain.
49.	*Toddalia asiatica* (L.) Lam.	Rutaceae	Jangli Kalimirch	Leaves	Leaf decoction is used against a cough and cold in children
50.	*Vitex negundo* L.	Verbenaceae	Nirgudi	Leaves	Leaf Juice is used for migraine.
51.	*Wattakaka volubilis* (L.) f. Stapl.	Asclepiadaceae	Harandodi, Nakchikni	Bark	Bark paste is mixed with hot milk is used internally for treating urinary troubles.
52.	*Withania somnifera* Dunal.	Solanaceae	Ashwagandha	Roots	Root powder is orally given with hot water to improve sexual vigor.

They use various plants and their distinctive parts viz., roots, leaves, stem and rhizome for different Ethno medicinal rehearses. During the study, a total of 52 species belonging to 36 families have been collected and identified. Among the documented medicinal plants, the family Asteraceae is frequently represented with a total of 4 species followed by Combretaceae, Fabaceae and Solanaceae with 3 species, the families like Apocynaceae, Aristolochiaceae,

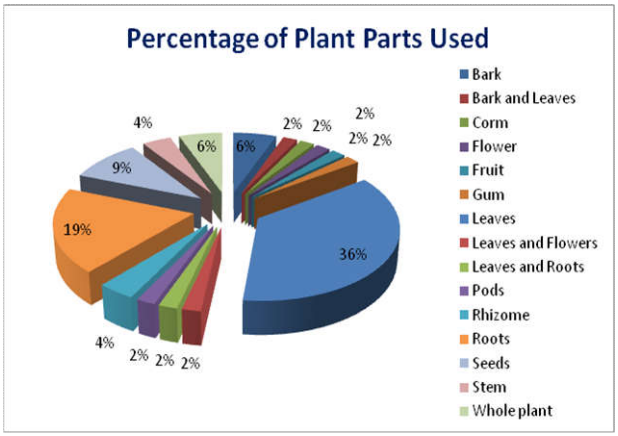

Figure 2. Percentage of plant parts used for the preparation of medicines by tribals of Dang-Surgana Forest of Western Ghats

Asclepiadaceae, Rubiaceae, Rutaceae, Verbenaceae, and Vitaceae with 2 species each and others with one species each. (Figure 1). Among the different plant parts used for the preparation of medicine, leaf (36%) is found to be the most frequently used plant part followed by all parts of the plant i.e. root (19%), seed (9%), whole plant (6%), bark (6%), stem (4%), rhizome (4%) and others with 2% each. (Figure 2). The most common mode of administration of medicine is decoction followed by juice, paste, and powder.

The present examination uncovers that the local health care practices of tribals in Dang-Surgana forest are imperative. It was also observed that local people used the identified medicinal plants mostly for curing several ailments like Abortion, anaemia, asthma, boils, bronchitis, burns, cardiac problems, cholera, constipation, cough, dandruff, diabetes, dysentery, ear pain, fracture and sprains, fractures, inflammation, kidney stone, leprosy, malaria, menstruation problems, migraine, nasal bleeding, piles, poisonous bite, rheumatism, sexual vigor, skin diseases, skin diseases, smallpox, tonic, tonsillitis, toothache, urinary infection, and worm infection etc. Leaves and roots were found to use heavily for medicinal preparation as compared with other parts. Another intriguing to take note of that the concentrates of more than one plant were utilized for treating a single disease. The ethnomedicinal practices of tribals of Dang-Surgana area having great knowledge of herbal medications. Such examinations may give some data to phytochemist and pharmacologist to grow new medications for different human diseases. The present generation takes no interest in preserving the traditional resources. This circumstance features the requirement for an entire record of their knowledge for future generations. These kinds of studies may invigorate researches to take up similar investigations in other tribal areas of Western Ghats. This investigation adds to the database of conventional information of medicinal plants. Further research is necessary for analysis, purification and characterization of novel medicinal compounds in ethnomedicinal plants.

REFERENCES

Ammal, JK. and Prasad, NP. 1984. Ethnobotanical findings of Costusspeciosus among Kannikkars of South Tamil Nadu. *Indian Journal of Economic and Taxonomic Botany*, 5: 129.

Bannerman, RH. 1982. Traditional Medicine in Modern Health Care, *World Health Forum*, 3: 8-13.

Bellamy, B. 1993. Ethno biology-Expedition Field Techniques, Expedition Advisory Centre, Royal Geographical Society, London.

Borthakur, SK. 1976. Native Phytotherapy for child and women diseases from Assam. *Fitoterapia*, 63:483-488.

Das, A. and Tag, H. 2006. *Ethnomedicinal* studies of the Khamti tribe of Arunachal Pradesh. *Indian Journal Traditional Knowledge*, 5 (3): 317-322.

Dubey, NK., Kumar, R. and Tripathi P. 2004. Global promotion of herbal medicine: India's opportunity. *Current Science*, 86 (1): 37-41.

Hiremath, VT. and Taranath, TC. 2013. Indigenous traditional knowledge on tree species survey of Jogimatti forest, Chitradurga District, Karnataka, India. *The Journal of Ethnobiology and Traditional Medicine*, 118: 222-227.

Hooker, JD. 1872- 1897. The Flora of British India, Vol. I-VI, Reeve & Co. London.

Ignacimuthu, S., Ayyanar, M. and Sivaraman, SK. 2006. Ethnobotanical investigations among tribes in Madurai District of Tamil Nadu, India. *Journal of Ethnobiology and Ethnomedicine*, 2: 25-30.

Jain, AK. and Patole, SN. 2001. Less-known medicinal uses of plants among some tribal and rural communities of Pachmarhi forest (M.P.). *Ethnobotany*, 13: 96-100.

Joshi, AR. and Joshi, K. 2000. Indigenous knowledge and uses of medicinal plants by local communities of the Kali Gandaki Watershed Area, Nepal. *Journal of Ethnopharmacology*, 73 (1-2): 175-183.

Lakshminarasimhan, P. and Sharma, BD. 1991. Flora of Nasik District, Vol. I-II, Botanical Survey of India.

Martin, G. 1950. Ethnobotany –A method manual, Chapman and Hall, London.

Mohan, VR., Rajesh, A., Athiperumalsami, T. and Sutha, S. 2008. *Ethnomedicinal* Plants of the Tirunelveli District, Tamil Nadu, India. *Ethnobotanical Leaflets*, 12: 79-95.

Patil, DA. 2008. Traditional Knowledge: Views, Necessity, and Prospects, In: Herbal Cures: Traditional Approach, Aavishkar Publishers, Jaipur, India.

Pei, SJ. 2001. Ethnobotanical approaches of traditional medicine studies: Some experiences from Asia. *Pharmaceutical Biology*, 39: 74-79.

Prasad, NP., Natrajan, CR., Narayanan, LM. and Ranjith Singh, AJA. 1996. Ethnobotany of Kannikkars of South Tamil Nadu. *Indian Journal of Economic and Taxonomic Botany*, 12: 292-298.

Ragupathy, S. and Newmaster, SG. 2009. Valorizing the 'Irulas' traditional knowledge of medicinal plants in the Kodiakkarai Reserve Forest, India. *Journal of Ethnobiology and Ethnomedicine*, 14:5-10.

Ragupathy, S., Newmaster, SG., Maruthakkutti, M., Velusamy B. and Ul-Huda MM. 2008. Consensus of the 'Malasars' traditional aboriginal knowledge of medicinal plants in the Velliangiri holy hills, India. *Journal of Ethnobiology and Ethnomedicine*, 27: 8-15.

Rajiv SK. Ethnobotany: The Renaissance of Traditional Herbal Medicine, INS Publishers, Jaipur, India, 1998.

Sandhya, B., Thomas, S., Isabel, W. and Shenbagarathai, R. 2006. *Ethnomedicinal* plants used by the Valaiyan community of Piranmalai Hills, Tamil Nadu, India –A Pilot Study. *African Journal of Traditional, Complementary and Alternative Medicines*, 3:101-114.

Savnur, HC. 1993. A Handbook of Ayurvedic Materia Medica, VI, Dr. Jarthar& Sons, Maruthi Street, Belgaum, Karnataka, India; 258-261.

Shah, GL. 1978. Flora of Gujrat, Part I and II, Sardar Patel University, Vallabh Vidyanagar.

Singh SK. 2004. Ethno-medicinal plants of Kullu valley, Himachal Pradesh. *Journal of Non-Timber Forest Products*, 11(1): 74-79.

Sivaperumal, R., Ramya, S., Ravi, AR., Rajasekaran, C. and Jayakumari, R. 2010. Ethnopharmacological studies on the medicinal plants used by tribal inhabitants of Kottur Hills, Dharmapuri, Tamilnadu, India. *International Journal of Science and Technology*, 557-564.

Suryanarayan, B. 1968. Flora of Dangs, Ph.D. thesis, Sardar Patel University, Vallabh Vidyanagar.

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