|| Volume 5 || Issue 8 || August 2020 || ISSN (Online) 2456-0774
INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH
AND ENGINEERING TRENDS

ETHNOBOTANICAL STUDY OF MEDICINAL PLANTS USED BY TRIBESOF GUNA DISTRICT, MADHYA PRADESH, INDIA

Rakesh Samar, Dr. Manju Jain, Dr. P. N. Shrivastava
Department of Botany, Govt. Girls College, Vidisha 464 001, M. P., India[1]
Department of Botany, Govt. Girls College, Vidisha 464 001, M. P., India[2]
Department of Botany, S. S. L. Jain P. G. College, Vidisha 464 001, M. P., India[3]

---------- ***----------

Abstract: - The investigation of ethno-medicinal plants in Guna districts of Madhya Pradesh, India have been conducted during 2012 to 2014. The indigenous and traditional knowledge of local tribal communities i.e. Bhil, Gond and Sahariyas and information regarding native plants used by them have been collected through questionnaire and personal interviews during the field survey. In the present investigation, a total number of 30 plant species belonging to 19 families were recorded, which are using by ethnic groups of district Guna of Madhya Pradesh. Fabaceae has the highest number of species (06 species) followed by Ceaselpianaceae and Combretaceae (03 species each), Liliaceae and Moraceae (02 species each) and rest of the families i.e. Anacardiaceae, Annonaceae, Asteraceae, Convulvulaceae, Cyperaceae, Ephorbiaceae, Meliaceae, Mrytaceae, Nyctangiaceae, Oleaceae, Rhamnaceae, Rutaceae, Sapotaceae and Solanaceae contain one species each.

Keywords: - Ethnobotany, Traditional Medicinal Plants, Indigenous, Guna, Madhya Pradesh

---------- ***----------

I INTRODUCTION

The main aim of the present study is to collect information on plants used traditionally by Bhil, Gond and Sahariyas, the primitive tribal communities of District Guna, Madhya Pradesh. Plants have been used in medicine for thousands of years. The herbal treasure of nation is rich in its floristic wealth.Ethnobotany means the study of relationship between people and plants for their use as food, shelter, fuel, fodder, medicines, clothing and other household uses (Balick, 1996).

It deals with the interaction of indigenous plants and the local people of the area. The aim of ethno-botanists is to explore how these plants are used as food, clothing, shelter, fodder, fuel, furniture and how medicinal use of such plants is associated to other characteristics of the plant species.

It is a multidisciplinary science that studies "the relationship among a society, its environment and in particular the plant world". They understand and collect the knowledge of valuable plants by the use of anthropological methods (Ram et al., 2004).

For nearly a century, ethno-biologists have collaborated with local community members in their efforts to document and safeguard our planet"s rich and varied bio-cultural heritage. Work in ethno-biology and ethno-medicine, including ethno-botany, ethno- zoology, and ethno-ecology, necessarily entails meticulous and rigorous systematic observation of the myriad ways indigenous and local community utilize, and classify the floral and faunal resources on which they depend for survival (Nolan and Pieroni, 2013). All the living organism especially human beings are mainly dependent on plants for medicine and therapeutics. Still now, 70 percent of the world population depends on medicinal plants for their primary healthcare (Ghimire et al., 2006). Ethnobotanical studies has been done in various part around the world viz. Africa (Houessou et al., 2012), Brazil (Zank and Hanazaki, 2012), Canada (Uprety et al., 2012), Malaysia (Ong et al., 2012), Nepal (Joshi and Edington, 1988; Singh et al., 2012), Pakistan (Qureshi et al., 2007; Ahmed et al., 2013), Papua New Guinea (Prescott et al., 2012).

Although, so many ethno-botanists is being done their research work in India (Jain 1963, 1965, 1987, 1991, 1996; Chaudhuri and Trivedi, 1976; Jain and Sikarwar 1997; Kumar and Pandey, 1998; Kumar et al., 2004; Jain et al., 2006; Manjunatha et al., 2009; Kaur and Joshi, 2010; Meena and Yadav, 2010; Namsa et al., 2011; Murthy, 2012; Alagesaboopathi, 2013). A lot of important information and indigenous knowledge have already been lost due to knowledge hold with older generation could not be transmitted to younger generations and remains unrecorded. Although the literature is replete with general references to ethnobotany for the country, efforts to

document specific details of this knowledge have been still limited and several workers are being made their efforts on this direction.

Central India is one of those region in India where the tribal population and forest dwellers from a considerable part of the population (Jain and Tarafder, 1963; Prasad and Pandey, 1987; Jain et al., 2010; Mishra et al., 2010). Their studies brought to light numerous less known uses of plants and interesting data on about ethno-medicinal plants.

Jain (2010) explained that ethnobotanical research in India in last few decades has mainly been on inventorization of plants used by the folk in various ways. This documentation has mostly been based on field work among the tribal areas. This paper suggests that for making ethno-botanical work really meaningful and of practical uses for human welfare, some new approaches are necessary, such as, critical analysis for new data, prioritization of species for various medicinal uses, prospect of socio-economic benefits such as through cooperative societies value addition of marketable products and cottage industry.

An ethnobotanical study was carried out in various tribal communities of Guna of Madhya Pradesh by Jain et al., (2010). They were collected information from the inhabitants of Guna district. Their study reveals that the Guna is rich in ethno medico - botanical diversity.

II MATERIALS AND METHODS

The Study Area

An ethnobotanical study was undertaken to collect information proposed to be useful for research on medicinal plants of the Guna district of Madhya Pradesh. The state of Madhya Pradesh comprises of a large population of tribal communities belonging to various ethnic groups. These forest dwellers live in forests and possess a vast knowledge on various aspects of plants. Guna, an administrative district of Madhya Pradesh is the gateway of Malwa and Chambal and is situated in Gwalior division of northern part of Madhya Pradesh. It is situated between 24°19 N latitude and 77°15 E longitudes, at a height of about 476 m above msl (Jain et al., 2010). Bhil, Gond and Sahariyas are the major tribal communities of the district of which Bhil tribes comprise larger population. They possess a vast knowledge of the treatment of their cattle through herbs. The method of treatment is traditional and drugs are used in crude form only.

Rural communities in particular tribes of Guna District, Madhya Pradesh, depend on plant resources mainly for herbal medicines, food, forage, construction of dwellings, making household implements, sleeping mats, and for fire and shade. The use of medicinal plants as traditional medicines is well known in rural areas of many developing countries (Samar et al., 2012).

Ethnobotanical Investigation

Periodic field trips of ethnobotanical exploration were undertaken in rural forest areas of Guna district dominated by tribal communities i.e. Bhil, Gond and Sahariyas and rural peoples during 2012 to 2014. The information were collected from the medicine men, village dwellers, women, village herbalists, village headmen and the aged and experienced people the herbal medicine practitioners, Vaidhyas and their traditional healers following the methodology of Jain and Goel(1995).Information was collected through questionnaires, bilateral discussion and open ended interviews on plants used by rustic people. There were many informants have been interviewed on random basis. Information about the Family, botanical name of species, Local name, plant Parts used, plant crude drug preparation, mode of applications, dosage and duration, Medicinal uses and plant parts were documented and later on identified and cross checked with the help of available literature.

III ENUMERATION AND OBSERVATIONS

The total information is arranged in alphabetical order in the following order: botanical name, family, local name, voucher specimen number, plant part used and part of the body which is touched with it.

The present study revealed that the investigated forest areas of Guna districts which are comparatively rich in floristic as well as ethno-medicinal diversity and the tribal people use locally available plant species for the treatment of human as well as livestock ailments and various diseases. In the present investigation, a total number of 30 plants species belonging to
19 families were recorded, which are traditionally used by Bhil, Gond and Sahariyas, the primitive tribal communities of District Guna, Madhya Pradesh. Fabaceae has the highest number of species (06 species) followed

by Ceaselpianaceae and Combretaceae (03 species each), Liliaceae and Moraceae (02 species each) and rest of the families i.e. Anacardiaceae, Annonaceae, Asteraceae, Convulvulaceae, Cyperaceae, Ephorbiaceae, Meliaceae, Mrytaceae, Nyctangiaceae, Oleaceae, Rhamnaceae, Rutaceae, Sapotaceae and Solanaceae contain one species each.

Rural people and tribal living in forest areas still depend to a great extent on the indigenous systems of medicine cultivation. So studies in this regard have been reported from a very limited number of the tribes of Guna. The ethno-botanical, phyto-sociological aspects in the region may provide meaningful ways for the promotion of traditional herbal medicinal plants land races of crop plants for the benefit of mankind at large in this region which is known as socio-economically backward.

The forest communities of Guna district has been analyzed for ethno-botanical importance. The forests are abundant with trees, shrubs, herbs and other species of medicinal value. A total of 30 plant species of medicinal and other importance have been recorded from the various localities of district Guna and are presented in Table - 1.

IV DISCUSSION

In Gwalior and Chambal divisions, ethnobotanical studies are concentrated on Bheel, Sahariya and Gond tribes (Anis and Iqbal, 2000; Kaushik and Singh, 1996; Sikarwar, 1997). A large number of species present in tribal localities of Guna district. In many parts of the Madhya Pradesh especially in the Guna District there is a rich tradition in the use of vegetables as an herbal medicine for the treatment of many diseases. India has had a rich, vibrant and diverse cultural history. An important component of this culture and tradition is that of health and healing. Thus there is a large health and healing related knowledge base present in all ethnic communities across the diverse ecosystems. A review of literature reveals that though much work has been done on ethnomedicinal plants in India (Jain et al., 2010; Jain and Vairale, 2007; Kadel and Jain, 2006; Sikarwar and Maheshwari, 1992) still there are some interior areas which need to be surveyed intensively like Guna district for searching new traditional medicines.

CONCLUSIONS

The forest areas of present investigation are inhabited by mainly Bheel and Sahariya tribes. Generally, the economy of most tribes was sustenance agriculture or hunting and gathering. A large number of tribal populations in rural areas are still dependent on forests for their livelihood. In the forest based tribal economy, provisions for basic necessities like utilize a wide variety of plants for food, fuel, housing material, fodder, medicine, dye, gum, tannin, thatching, household and farming implements etc. are made from the forest produce.

Tribal people had been living in natural habitats for centuries. Guna has a large tribal population. They are hardly aware of their historical background in the absence of any written document or scholarly work. Though, most of the tribals are illiterate even now, mostly all adults are uneducated. They are now working for the people who forcefully took away the land they possessed in the nearby villages and the forests. As part of their job, they pick seasonal fruits and other forest products.

A common characteristic popular about this tribe is their sustenance economy. Tribal people earn enough to dine for the day and do not preserve products for long-term survival. Even if they earn big money someday, they spend it all on the day itself and again begin their hunt for food the next day. Earlier these tribal were very innocent and hardly knew the ways of ordinary people‟s lifestyles. They had been long exploited for physical labour due to their backwardness and lack of knowledge. However things have taken quite a different turn in the present. They are clever enough to resist exploitation, as they now understand monetary, markets and people in towns quite well.

At the present time, much of the wealth of knowledge is being lost as the traditional culture is disappearing. Hence, documentation of traditional practices of herbal medicine will be coherence in future. There is an urgent need to study and document the precious knowledge of ethnomedicinal practices. The information on the ethnomedicinal plants will certainly help in developing strategies for the conservation, cultivation of traditional medicine and economic welfare of rural and tribal population of this region. This study may provide prime for further scientific research for the development of modern medicine as well as for rural people of this region.

ACKNOWLEDGEMENTS

The authors are thankful to informants, practitioners and tribal who provided the information and sharing their

knowledge on herbal medicines and species identifications.

REFERENCES

1. Ahmed, E., Arshad, M., Saboor, A., Qureshi, R., Mustafa, G., Sadiq, S. and Chaudhari, S.K. 2013. Ethnobotanical appraisal and medicinal use of plants in Patriata, New Murree, evidence from Pakistan. Journal of Ethnobiology and Ethnomedicine 9-13.

2. Alagesaboopathi, C. 2013. Ethnomedicinal plants used for the treatment of snake bites by Malayali tribal‟s and rural people in salem districts, Tamilnadu, India. Int. J. Biosci 3(2): 42-53.

3. Anis, M., Sharma, M.P. and Iqbal, M. 2000. Herbal Ethnomedicine of the Gwalior forest division in Madhya Pradesh, India. Pharmaceut Biol 38(4): 241-253.

4. Balick, M.J. 1996. Transforming ethnobotany for the new millennium. Ann. Mo Bot Gard 83: 58-66.

5.Chaudhuri, H.N. and Trivedi, G.N. 1976. On the occurrence of the some medicinal plants in
24 Parganas, West Bengal. Bull. Botanical Survey of India 18(1-2): 161-165.

6.Ghimire, S.K., McKey, D. and Ameeruddy- Thomas, Y. 2006. Himalayan medicinal plant diversity in an ecologically complex high altitude anthropogenic landscape, Dolpo Nepal. Environ Conserv 33: 128-140.

7.Houessou, L.G., Lougbegnon, T.O., Gbesso, F.G.H., Anagonou, L.E.S. and Sinsin, B. 2012. Ethno-botanical study of the African star apple (Chrysophyllum albidum G. Don) in the Southern Benin (West Africa). Journal of Ethnobiology and Ethnomedicine 8: 40.

8.Jain, A.K. and Vairale, M.G. 2007. Some Threatened Angiospermic Taxa of Chambal Eco- region. Phytotaxonomy 07: 107-110.

9.Jain, A.K., Vairale, M.G. and Singh R. 2010. Folklore claims on some medicinal plants used by Bheel tribe of Guna district Madhya Pradesh. Indian Journal of Traditional Knowledge 9(1): 105-107.

10.Jain, J.B., Kumane, S.C. and Bhattacharya, S. 2006. Medicinal flora of Madhya Pradesh and Chattisgarh – A Review. Indian Journal of Traditional Knowledge 5(2): 237-242.

11.Jain, S.K. and Goel, A.K. 1995. Workshop Exercise - 1. Proforma for field work: In a Manual of Ethnobotany (ed. Jain SK), Scientific Pub, Jodhpur, 142-147.

12. Jain, S.K. and Sikarwar, R.L. 1997. Prospective under Utilized Bioresources -Clues from indigenous knowledge in Latin America. J. Indian Botanical Society 76: 253-260.

13. Jain, S.K. and Tarafder, C.R. 1963. Native plant remedies for snakebite among the Adivasis of central India. Indian Med. Jour. 57(12): 307- 309.

14. Jain, S.K. 1963. Studies in Indian ethnobotany: Less known uses of fifty common plants from tribal areas of Madhya Pradesh. Bull. Botanical Survey of India 5(3-4): 223-226.

15. Jain, S.K. 1965. Medicinal plant lore of the tribal of Bastar. Economic Botany 19(3): 236- 250.

16. Jain, S.K. 1987. Glimpses of Indian Ethnobotany. Oxford and IBH Publishing Co., New Delhi.

17. Jain, S.K. 1991. Dictionary of Indian Folk Medicine and Ethnobotany, Deep Publications, New Delhi.

18. Jain, S.K. 1996. Ethnobiology in Human Welfare.Deep Publication. New Delhi.

19. Jain, S.K. 2010. Ethnobotany in India: some thoughts on future work. Ethnobotany 22: 01-04.Joshi, A.R. and Edington, J.M. 1988. The use of medicinal plants of two village communities in the central development region of Nepal. Economic Botany 44(1): 71-83.

20. Kadel, C. and Jain, A.K. 2006. Plants Used in ethnoverterinary practices in Jhabua district, MadhyaPradesh. Ethnobotany 18: 149-152.

21. Kaur, R. and Joshi, S.P. 2010. Ethnobotany of wild plants of govind wildlife sanctuary and national park, Uttarakhand. Indian Forester 11041118.

22. Kaushik, J.P. and Singh, R.A. 1996. Poisonous cultigens of Gwalior region. J Swamy Bot. Cl. 13: 29-32.

23. Kumar, A. and Pandey, R. 1998. Tribals and the utility of the medicinal plants in their day to day lives in Santhal Pargana, Bihar. Ecol. Environ. Cons. 4(1-2): 65.

24. Kumar, R., Suman, N.R. and Dash, S.S. 2004. Traditional uses of plants by tribals of Amarakantak region, Madhya Pradesh. Indian. Journal of Traditional Knowledge 3(4): 383-390. 26.Manjunatha, G., Suryanarayana, V., Dasar, G.V., Patil, S.K. and Hegde, N. 2009. Important indigenous tree species of medicinal importance and their utilization in Uttara Kannada district (Karnataka). My Forest 45(4): 475-484.

26.Manjunatha, G., Suryanarayana, V., Dasar, G.V., Patil, S.K. and Hegde, N. 2009. Important indigenous tree species of medicinal importance and their utilization in Uttara Kannada district (Karnataka). My Forest 45(4): 475-484.

27. Meena, K.L., Yadav, B.L. 2010. Some ethnomedicinal plants of Southern Rajasthan. Indian Journal of Traditional Knowledge 9(1): 169-172.
28. Mishra, S., Sharma, S., Vasudevan, P., Bhatt, R.K., Pandey, S., Singh, M., Meena. B.S. and Pandey, S.N. 2010. Livestock feeding and traditional healthcare practices in Bundelkhand region of Central India. Indian Journal of Traditional Knowledge 9(2): 333-337.
29. Murthy, E.N. 2012. Ethno medicinal plants used by gonds of Adilabad district, Andhra Pradesh, India. Int. J. of Pharm. & Life Sci. 3(10): 2034-2043.
30. Namsa, N.D., Mandal, M., Tangjang, S. and Mandal, S.C. 2011. Ethnobotany of the Monpa ethnic group at Arunachal Pradesh, India. Journal of Ethnobiology and Ethnomedicine 7: 31.
31. Nolan, J. and Pieroni, A. 2013. Recollections, reflections, and revelations: ethnobiologists and their "First Time" in the field. Journal of Ethnobiology and Ethnomedicine 9-12.
32. Ong, H.C., Norliah, A. and Sorayya M. 2012.Traditional knowledge and usage of edible plants among the Temuan villagers in KampungTering, KaulaPilah, Negeri Sembilan, Malaysia. Indian Journal of Traditional Knowledge 11(1): 161-165.
33. Prasad, R. and Pandey, R.K. 1987. Survey of medicinal wealth of central India. Journal of Tropical Forestry 3: 287–297.
34. Prescotta, T.A.K., Kiapranisb, R. and Maciverc, S.K. 2012. Comparative ethnobotany and in-the-field antibacterial testing of medicinal plants used by the Bulu and inland Kaulong of Papua New Guinea. Journal of Ethnopharmacology 139: 497-503.
35. Qureshi, R.A., Gilani, S.A. and Ghufran,
M.A. 2007. Ethnobotanical studies of plants of Mianwali district, Pakistan. Pak. J. Bot. 39(7): 22852290.
36. Ram, J., Kumar, A. and Bhatt, J. 2004. Plant diversity in six forest types of Uttaranchal,Central Himalaya, India. Current Science 86(7): 975-978.
37.Samar, R., Agrawal, M.K., Varma, A.K. and Jain, M. 2012. Ethnobotanical documentation of some vegetable plants in the villages of Guna district, Madhya Pradesh, India, Indian J. L. Sci. 1(2): 75-78.
38.Sikarwar, R.L.S. and Maheshwari, J.K. 1992. Some unrecorded ethnobotanical plants from Amarkantak plateau of M. P. Bull. T.R.D.I. 20(1- 2): 19-22.
39.Sikarwar, R.L.S. 1997. Ethnobotany of Sahariya tribe, Madhya Pradesh, India. Appl Bot Abstr 17(2): 129-140.
40.Singh, A.G., Kumar, A. and Tewari, D.D. 2012. An ethnobotanical survey of medicinal plants used in Terai forest of western Nepal. Journal of Ethnobiology and Ethnomedicine 8- 19.
41. Uprety, Y., Asselin, H., Dhakal, A. and Julien, N. 2012. Traditional use of medicinal plants in the boreal forest of Canada: review and perspectives. Journal of Ethnobiology and Ethnomedicine 8(1): 7.
42.Zank, S. and Hanazaki, N. 2012. Exploring the Links between Ethnobotany, Local Therapeutic Practices, and Protected Areas in Santa Catarina Coastline, Brazil. Evidence- Based Complementary and Alternative Medicine. Hindawi Publishing Corporation, Article ID 563570, 15 pages. http://dx.doi.org/10.1155/2012/563570.

Table 1: Plants used traditionally by Tribes of Guna district.

Se. No.	Botanical Name	Family	Local Name	Part Used	Medicinal Uses
01	*Acacia catechu* Willd.	Fabaceae	Khair	Bark	The decoction of bark used to cure skin diseased especially eczema.
02	*Acacia nilotica* (Linn.) Willd. ex Delile	Fabaceae	Babool, Desi Babool	Gum of bark and fruits (pods)	The decoction of bark yields spongy gum which is using in sore throat, for washing ulcers, to stop bleeding from wounds, skin diseases, as an astringent for diarrhoea and leucorrhoea.
03	*Aegle marmelos* (L.) Correa	Rutaceae	Bel, Beipatra	Roots, Leaves and Fruits	The roots are astringent and febrifuge, useful in diarrhoea, dysentery, dyspepsia, seminal weakness, vomiting, intermittent fever and gastric irritability in infants. Pulp of unripe or half ripe fruit mixed in water is given in diarrhoea. Pulp of ripe fruit mixed with water for making *Sharbat*, acts as soothing agent.
04	*Albizzia lebbek* (Linn.) Benth.	Fabaceae	Kala Siris	Bark of stem and shoots, leaves, flowers and seeds	The plant is considered an alternative, astringent, expectorant and tonic. It is effective in asthma, reduces enlargement of cervical gland; in cough and colds; strengthens gums, thickens and retains seminal fluid. The powdered bark is useful in ulcers and in snake-bite wounds. Oil obtained from seeds is useful in leucoderma.
05	*Aloe barbadensis* Mill.,	Liliaceae	Ganwar patta	Leaves	Fresh juice is cathartic, cooling and useful in fever. Pulp is used in menstrual suppression. Leaves are used as hot poultice to relieve swellings.
06	*Annona squamosa* Linn.	Annonaceae	Sitaphal	Bark	The bark powder is applied externally in wound healing.
07	*Asparagus racemosus* (Willd.) Oberm.	Liliaceae	Satavar	Roots	Fresh root juice is mixed with honey and given for dyspepsia. The dried roots are burnt and fumes are inhaled for curing fever.
08	*Azadirachta indica* Ad. deJuss.	Meliaceae	Neem	Whole Plant	The whole plant is used as medicine. The bark is astringent, refrigerant, insecticidal, liver tonic and urinary astringent. Leaves are useful in burning sensation, leprosy, skin diseases, leucoderma, dyspepsia, ulcers, tuberculosis, eczema, malarial and

					intermittent fever. The flowers are useful in dyspepsia and intestinal burns. The seeds are useful in leprosy, ulcer, diabetes and to kill insects.
09	*Boerhavia diffusa* Linn.	Nyctaginaceae	Punarnava	The whole plant and roots	The aqueous extract of plant is considered a good diuretic, given in controlling urinary trouble, jaundice and other liver complaints. Root is useful in diseases of the heart, kidneys, gonorrhoea and dropsy.
10	*Butea monosperma* (Lam.) Taub.	Fabaceae	Dhak	Leaves, bark, flowers, seeds and gum	The leaves and the wood is considered sacred and used in religious ceremonies. The flowers are kept indoor to keep away the house flies. The flowers are also the source of a dye.
11	*Caesalpinia dicapetala* (Roth) Alston.	Caesalpiniaceae	Shikakai	Leaves	Leaf powder with mishriis given in fever. Leaf paste is applied on boils.
12	*Cassia fistula* Linn.	Caesalpinaceae	Amaltas	Leaves, roots and fruits	The leaves are emollient; paste prepared from its juice proves a useful dressing for ringworm and chilblain, for relieving irritation, rheumatism and facial paralysis. The leaves are rubbed into affected parts. The alcoholic extract of the root bark is used for black water fever. The fruit cures leprosy, diseases of heart and is applied externally in rheumatism and snake bite.
13	*Cyperus rotundus* Linn	Cyperaceae	Nagarmotha, Motha	Tubers and roots	The roots are given in fever, dyspepsia, diarrhoea, and cholera. As a galactagogue, the crushed fresh tubers are applied to the breasts. Root paste is applied for healing wounds and sores.
14	*Dalbergia sissoo* Roxb.	Fabaceae	Sheesham	Seeds, leaves, bark and roots	The leaves are used to cure eye diseases and gonorrhoea. The wood oil relieves the burning sensation of the body. The oil is also used in the treatment of scabies and leprosy. Bark is alterative, antiemetic, astringent and aphrodisiac, whereas roots are constipating. Roots are astringent and also useful in diarrhoea and dysentery.
15	*Datura alba* (Nees. Ab. Esenb.)	Solanaceae	Dhatura	Leaves, roots, flowers and seeds	The roots are useful in reducing inflammation. The leaves are universally used in the treatment of asthma. The leaves after roasting are applied locally to

					relieve eye pain, headache, nose trouble, enlargement of testicles and boils. The flowers are dried and roughly powdered with or without the leaves and rolled into a cigarette for the relief of asthma.
16	*Emblica officinalis* Gaertn. Fruct.	Euphorbiaceae	Amla	Fruits and seeds	The fruit is used in combination with that of *Terminalia chebula* and *T. bellericain* the form of powder and decoction known as Triphala (three fruits) as a cooling and refrigerant. The fresh fruit is antiscorbutic, diuretic and laxative, also used in fevers, vomiting, indigestion, habitual constipation and other disorders of digestive system. The infusion of dried fruit is efficacious eye wash in ophthalmia. An infusion of seeds is given in fevers, diabetes, bilious– affections and nausea.
17	*Ficus bengelensis* Linn.	Moraceae	Bargad	Bark, latex, aerial roots, leaves and buds	The bark is an astringent. Its infusion is a specific cure for diabetes, diarrhoea, leucorrhoea and dysentery. The latex is commonly used locally for rheumatism, lumbago, sores, ulcers, pains, cracked and inflammed soles and toothache. The tender ends of the aerial roots are given in obstinate vomiting. The buds are useful in diarrhoea and dysentery. The bark and roots are used against snake bites.
18	*Ficus religiosa* Linn.	Moraceae	Pipal	Bark, fruits and seeds.	The bark is astringent and its decoction is given in gonorrhoea, scabies and snake bite. Its juice relieves toothache and strengthens the gums. It is a useful dressing for cracked, inflammed soles of feet and also a powerful CNS stimulant and hypoglycemic. Powder of seeds taken for three days during menses sterilizes women for long time.
19	*Madhuca indica* Gmel.	Sapotaceae	Mahua	Seed and Fruits	Seed oil applied externally on affected part to cure from rheumatism. Fresh fruits are taken in morning for relief from stomach pain.
20	*Mangifera indica* Linn.	Anacardiaceae	Aam	Leaves, bark, fruit, seeds, and	A powder of the tender leaves is given in diarrhoea and diabetes. The smoke from burning leaves is inhaled for the relief of

				gum exudates	throat diseases; their ash is a popular remedy for burns. An ointment made of resinous gums from the tree is a dressing for scabies and other skin diseases. Unripe fruit in the form of slices and sun dried „amchur" is valuable as an antiscorbutic. The juice extracted from seeds is used for stopping bleeding from the nose.
21	*Merremia emerginata* (Burm.f.) Hall.f.	Convolvulaceae	Phopshina	Whole Plant	Whole plant is used as an antidote against snakebite.
22	*Nyctanthes arbortristis* Linn.	Oleaceae	Harshingar	Leaves, bark and seeds	Leaves are expectorant, laxative used in rheumatism and fever; their decoction is given in sciatica; the leaf juice is used as chalagogue, diaphoretic and diuretic. The bark is used as an expectorant. The powdered seeds are used for scurvy and affections of the scalp.
23	*Sphaeranthus indicus* L.	Asteraceae	Gorakhmundi	Whole Plant	Children suffering from dysentery are exposed to fumes of whole plant.
24	*Syzygium cuminii* (Linn.) Skeels	Myrtaceae	Jamun	Bark, leaves, fruits and seeds	The bark is useful in diabetes, haemoreges, dysentery, leucorrhoea, fever, dermatopathy, burning sensation, dyspepsia, cough and asthma. The tender leaves are used for vomiting. Powdered seeds are used in diabetes.
25	*Tectona grandis* Linn. f.	Fabaceae	Sagun	Bark, flowers, seeds and seed-oil	Wood boiled in water is used as a local application to relieve headache, toothache, and to subdue inflammation and irritation of skin. Flowers are acrid, bitter and diuretic, useful in bronchitis, biliousness, and urinary discharges. Oil of nuts is used in scabies and to promote growth of hair.
26	*Terminalia arjuna* (Roxb.) Wight &Arn.	Combretaceae	Arjuna	Bark and leaves	Leaves are given in a compound decoction for flatulent distension of abdomen. It is applied as a paste on pimples and other minor skin eruptions. The pulverized bark gives relief in symptomatic hypertension, cardio tonic and as a diuertic in cirrhosis of liver. Fruits and seeds are used as children"s anathelmatic for ascaris. Roasted seeds used in diarrhoea and fever. They are also used for rickets in children. Seeds

					are used as an external application to parasitic skin diseases.
27	*Terminalia bellerica* Roxb.	Combretaceae	Baherha	bark, seeds and fruits	The bark is used as an astringent for dressing wounds and sore throat. The seeds are household remedy for inflammatory and functional dearrangement of the mucous membranes of the gastrointestinal and genitourinary systems. They are popularly used in diarrhea and dysentery, also for gonorrhoea, piles and in chronic constipation. The kernel of the fruit is said to have a narcotic and aphrodisiac effect. The fruit is an ingredient of „Trifala".
28	*Terminalia chebula* Retz.	Combretaceae	Harra	Fruits	Fruit is astringent, anodyne, thermo-genic, anti-inflammatory, laxative, carminative, digestive, cardio tonic, aphrodisiac and febrifuge. Chebulic acid is also used in ulcers, wounds, helminthiasis, jaundice, cough, epilepsy, opthalmopathy, skin diseases, leprosy, cardiac disorders and neuropathy. The fruit is an important constituent of Ayurvedic medicine "Trifala".
29	*Tamarindus indica* Linn.	Caesalpiniaceae	Imli	Leaves, bark and fruits	The fresh juice of tender leaves is useful in bilious fever and scalding urine. The decoction of leaves is used as an anthelmintic for destroying worms in children and also for jaundice. Dried powdered leaves are used as an astringent over foul ulcers. A lotion made from the leaves is used for wounds and for sore eyes and it is also an effective gargle. The pulp of the fruits is used in dysentery and for preventing and curing scurvy. A drink made from fruit pulp is useful in sunstrokes. They are useful in gastropathy, bilious vomiting.
30	*Ziziphus mauritiana* Lamk.	Rhamnaceae	Ber, Beri	Fruits	Cooled decoction of dried fruits is given during cold and cough.