Ethnobotanical studies and documentation of folk medicinal plants used by tribes in the management of liver diseases in Satpuda hills of Khandesh region of Maharashtra

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Abstract
West Khandesh region of Maharashtra was targeted areas for ethnobotanical survey of medicinal plants used by tribes in the management of liver diseases and simultaneously documentation was made on information. Field of area is densely occupied by various tribes communities like Pawara, Kokani, Bhils, Mavach, Vasave etc. Ethnobotanical survey was carried out after interviewed numbers of different age group traditional healers. It is cleared that, they have huge knowledge of medicinal plants, number of plants, method of preparations and their vernacular names as well as local names, for management of liver diseases. Tribals are strongly believed and have a strong faith on the treatment of medicinal plants by traditional healers. Traditional healers have been diagnosing and treating their patient in number of ways like skin color of patient, voice and tongue condition, herbal medicines are given in different forms to patient. Thirty numbers of plants belong to Rubiaceae, Mimosaceae, Nyctaginaceae, Acanthaceae, Cucurbitaceae and Convolvulaceae families are used by traditional healers in the management of liver disorders.

Keywords: Liver disorders, Ethnic groups, West Khandesh region of Maharashtra.

Introduction
India is constructed by twenty eight states and seven union territories and fortunately every state and union territory has varied geographical and climatic conditions so India is an ideally known for its rich vegetation and plant biodiversity. Near about 422,000 flowering plants reported from the world,1 out of that more than 50,000 are used for medicinal purposes.2 In India, more than 43% of the total flowering plants are reported to be of medicinal importance.3 Since antiquity plants have been playing a great role in the development of medicine and public health. In India People from rural areas are still relay on the Indian traditional systems of the medicine like Ayurveda, Sidha and Unani entirely and Homeopathy partially depend either on plant materials or their derivatives for the treatment of various ailments.

Nearly 1100 species were recognized as sources of raw materials for Ayurvedic and Unani formulations.4 About 25% of drugs in modern pharmacopoeia were derived from plants (phytomedicines) and many others were synthetic analogues built on prototype compounds isolated from plants.5 In spite of the advent of the modern medicines, tribal population is still practicing the art of herbal medicine as well as various underprivileged tribal communities are earning money by selling medicinal plants as an income source rather than use as a curative agent in various ailments. Almost 80% of the total human populations still depend upon traditional remedies together with folklore system based mainly on phyotherapy.6 Tribals are more fortunate that they have sound knowledge of medicinal plants; as a result they are being acts as a strong informative source.

Liver is one of the important vital organs with several important homeostatic responsibilities. One of the primary functions of the liver is to aid in the metabolism of ingested substances, including food, dietary supplements, alcohol and majority of medications. Various types of liver disorders are characterized by cirrhosis, jaundice, tumors, metabolic and degenerative lesions, liver cell necrosis and virus liver disorders can arise due to excessive drug therapy.7

Results and Discussion
The present study indicated that tribes belong to Khandesh region of Maharashtra still having a strong faith on the treatment given by their traditional medical practitioners in concern to liver diseases. Traditional medical practitioners as well as local tribes are having huge and precious knowledge and using 30 species of medicinal plants belong to 21 families are used primary to cure Jaundice (Table 1). The 30 species of medicinal plants are categorized as 09 herbs, 07 shrubs, 02 small trees, 09 big trees, and 03 climbers. Literature survey was conducted on the information, which was given by traditional medical practitioners as well as local tribes in concern to ethnomedicinal uses of plants and it is cleared that out of 30 plant species, 07 plants were found as unexploited rationally. These plants are Delonix elata Gamble. Fabaceae, Ficus tsiela Roxb. Moraceae, Gardenia turgida Roxb. Rubiaceae, Gossypium herbaceum linn. Malvaceae, Hymenodictyon orixense Roxb. Rubiaceae, Ipomoea

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147
pes-tigridis Linn. Convolvulaceae, Mentha viridis Linn. Labiatea, has not been reported previously.

Table 1: Liver protective plant species documented from Satpuda hills of Khandesh region of Maharashtra

| S. No. | Botanical name and family | Local name | Tree/ shrub/ herb/ climber | Parts used | Mode of preparation |
|--------|---------------------------|------------|----------------------------|------------|---------------------|
| 1      | Abelmoschus esculentus Linn. Malvaceae | Bhendi, bhindi | Herb | Fr, Fl | Juice of fruit and given twice in day orally for five days |
| 2      | Adhatoda vasica Nees. Acanthaceae | Adulsa | Shrub | Lv | Juice of fruit and given orally for seven days. |
| 3      | Aegle marmelos Corr. Rutaceae | Bel, bili, belda | Tree | Lv, Fr, St | Leaves boil with water and take orally |
| 4      | Ailanthus excelsa Roxb. Simaroubaceae | Maharukh, budroka, rukhdo | Tree | Bk | Bark of Powder mixed with water |
| 5      | Allium cepa Linn. Liliaceae | Kanda | Herb | Fr | Juice of Fr and given orally |
| 6      | Aloe barbadensis Valh. Liliaceae | Khorpad | Herb | Lv | Juice of Lv and given orally |
| 7      | Asteracantha longifolia Nees. Acanthaceae | Tamimkhana, wakharya | Shrub | Lv, Sd | Wash Lv then dry, make powder and macerate with water |
| 8      | Bauhinia racemosa Linn. Caesalpiniaceae | Sone, apta | Tree | Lv, St Bk | Bark Powder boil with water and take orally for seven days |
| 9      | Butea monosperma Kuntze. Papilionaceae | Palas, khakara | Tree | St Bk, Fl | Keep Fl on stomach overnight |
| 10     | Calotropis gigantea R.Br Apocynaceae | Ruchki, ruwali, rui, aakadya | Shrub, | Fr, Fl. | Fl Powder mixed with water and take orally |
| 11     | Cucurbita maxima Duchesne Cucurbitaceae | Tambada-bhopala | Climber | Fr | Juice of fresh fruit or powder of fruit taken orally |
| 12     | Curculigo orchioides Gaertn Amaryllidaceae | Kali-musali | Herb | Rt | Rt Coarse Powder, boil with water and take orally three times for three days |
| 13     | Carcuma longa Linn. Zingiberaceae | Halad | Herb | Rh | Powder of Rh mixed well with grains powder and poured little water mixed well and made tablets |
| 14     | Cuscuta chinensis Lam. Convolvulaceae | Amavel | Climber | Wp | Make paste of aerial parts and apply on body |
| 15     | Delonix elata Gamble. Fabaceae | Sansada, way | Tree | Lv | Wash Lv and boil with water and take bath |
| 16     | Eclipta prostrata Roxb. Asteraceae. | Makha, kala-makha | Herb | Lv | Juice of fresh Lv orally or powder of Lv with honey orally |
| 17     | Eranthemum roseum vahl. R.BR. Acanthaceae | Thandi karav | Shrub | Rt, Lv, Bk | Make paste of fresh Lv and apply on body |
| 18     | Ficus religiosa Linn. Moraceae | Pimpal, pippal | Tree | Bk | Coarse Powder of Bk, boil with water, take orally twice day for five days |
| 19     | Ficus tsiela Roxb. Moraceae | Pipri | Tree | Bk | Bk powder macerate two days with water, take orally on empty stomach |
| 20     | Gardenia turgida Roxb. Rubiaceae | Small tree | Rt | Put Rt powder in hot water and take orally on empty stomach |
| 21     | Gmelina arborea Linn. Verbenaceae | Hiwan, shivan, | Tree | Lv | Wash Lvs then boil with water and take orally |
| 22     | Gossypium herbaceum linn. Malvaceae | Deo-kapus | Shrub | Rt | Rt Powder macerate with water overnight, next morning take orally on empty stomach |
| 23     | Helicteres-isora.Linn. Sterculiaceae | Murud- sheng,atti, | Shrub | Sd Bk, Fr, Rt | Sds powder of boiled with water and take once in day for three days |
Experimental Section

Study Area: In Maharashtra state there are 47 Scheduled tribes. Khandesh region of this state is basically constructed by Dhule, Nandurbar, Jalgaon and Nashik districts respectively. Western hilly areas of Dhule and Nandurbar districts are densely occupied by a number of tribes communities like Pawara, Bhils, Vasave etc. But among all tribes, Pawara tribe is one of the major and is mostly in habited in the ranges of Satpuda hills. Their economical activities are entirely depends up on agriculture and their deities concern with hills, forest, animals and forest materials. Dhule and Nandurbar districts are situated between the meridians of longitudes 73°31’ and 75° 11’ east and between the parallel of latitudes 20°38’ and 22°3’ N. Dhule district is bounded by Gujarat State on west and by Madhya Pradesh on north along with Nandurbar, on east and south by Jalgaon and Nasik respectively. Climate of district is on the whole dry except during south-west monsoon season. Average annual rainfall in the district is 674.0 mm. It is also situated in valley of the Tapi River along with bank of Panzara River.

Nandurbar district sharing common boundaries with Dhule district to the south, Gujarat State in the west, States of Gujarat and Madhya Pradesh in the north and Madhya Pradesh and Dhule district to the east. Climate of district is on the whole dry except during south-west monsoon season. Average annual rainfall in the district is 767 mm. It has mainly hilly region and have 'Toranmal' which is 2nd hill station after Matheran in Maharastra.8,13

Methodology

Dhule and Nandurbar districts of Khandesh region of Maharashtra were, ethno botanically exploited for folk medicinal plants used by pawara tribe in treatment of liver diseases. Initially relevant format was prepared for ethno botanical survey and then various tribal villages, belongs to especially pawaras communities were visited and interacted with tribes to acquire valuable information on medicinal plants. But in the beginning faced lot of difficulties such as tribals are residing in hilly areas as a result it was difficult mission to identify about their location, to get traditional healers at their places, to understand their language because most of them speak their native language only, they also hesitated to give information and so on. Numbers of visits were made to get an opportunity to develop relation with different Pawara tribe also with head of the Pawaras tribe in the village is known as Patil who conducted village administration by all respects as well as local mediators were identified and through them survey was conducted.

Conclusion

This study records the uses and abundance of the hepatoprotective plants in Satpuda region of Khandesh, Maharashtra, India. The information obtained can be used in identifying species which should be given priority when developing sustainable harvesting strategies for species within the communities. It also assists the people in this locality to maximize the use of their flora in the management of liver diseases.

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References

1. R. Govaerts, 2001, Taxon 50, 1085–1090.
2. U. Schippmann, A. B. Cunningham, D. J. Leaman, 2002, Ninth Regular Session of the Commission on Genetic Resources for Food and Agriculture, FAO, Rome, Italy, 143–167
3. P. Pushpangadan, 1995, Ethnobiology of India: A Status of Report. Government of India, New Delhi.
4. R. Gupta, 1986, Indian Society of Tree Scientists, Solan, India, pp. 59–67.
5. M. R. Rao, M. C. Palada, B.N. Becker. Agroforestry Systems. 2004;61:107–122.
6. H. Azaiezeh, S. Fulder, K. Khalil, O. Said. Fitoterapia 2003;74:98–108.
7. R. Binvy, S. D. J. Singh, V. J. Samual, S. John, A. Siddiqua. Journal of Pharmacy Research. 2013;7:15-19.
8. D. A. Patil, 2003, Flora of Dhule and Nandurbar Districts, Bishan Singh Mahendra Pal Singh Publication, Dehradun, 80-559.
9. K. R. Kirtikar, and B. D. Basu, Indian Medicinal Plants, 2nd edition, reprint 1999, International Book Distributor, Dehradun, India, 854-872.
10. The Wealth Of India, raw materials, revised edition, Vol III, Council of Scientific and Industrial Research New Delhi, reprinted by the Publication of Information Directorate, New Delhi, 2003;3:327-373.
11. P. P. Sharma, A. M. Mujundar. Indian Journal of Traditional Knowledge. 2003;2:292–296.
12. S. B. Badgjear, R. T. Mahajan. Ethnobotanical Leaflets. 2008;12:1137-44.
13. D. L. Jain, A. M. Baheti, K. R. Khandewal. Indian Journal of Traditional Knowledge. 2010;9(1):152-157.