



STUDY OF SELECTED ECONOMICALLY AND CULTURALLY IMPORTANT PLANT RESOURCES AMIABLE TO FUTURE INTENSIVE EXPLOITATIONS IN PARTS OF SAHYADRIS IN MAHARASHTRA, INDIA.

Botany

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ABSTRACT

The paper embodies the initial integrated study on parts of western Ghats from human ecological viewpoints, aimed at holistic understanding of biodiversity, interrelationships of less privileged people with vegetational resources from ecologically changing semi-evergreen and evergreen forest patches by taking into consideration their agronomic, social and cultural practices. Against this background, the present study is necessary for obtaining insights for interpretations of Agricultural evidences recovered by systematic excavations conducted at various river valley archaeological settlements.

METHODOLOGY: It deals with the basaltic terrain of Sahyadri hill ranges, slash and burn cultivation (shifting agriculture), simple eco-friendly practices of sowing, harvesting, winnowing, storage and conservation of traditional varieties by marginal farmers who seem to have been propelled into valley cultivation during the recent past. Preliminary survey of cultivated plants in agricultural practice in study area

RESULTS & CONCLUSION : Most of these plants call in situ conservation within ecological niches, habitat conservation and commercial propagation for providing means of livelihood to local populace which can slow down flow of people towards urban areas

KEYWORDS

Western Ghats, Biodiversity, Plant Resources, Endangered Plants.

INTRODUCTION

Through the course of the history of our earth, man and plants have co-existed under a unique relationship which now stands disrupted. The hideous scars on the tropical-Semiotropical forests which harbour the greatest part of our biodiversity are examples of the widening gap between the two.^{1,2}

In south Asian and South-East Asian countries, we are fortunate enough to have the "Past" still lingering with us in relic form in our present societal make up.. The current ongoing study, albeit in its infancy, throws light on development of agricultural and social-cultural, religious practices. It is potentially capable of unravelling antiquity of biodiversity at local, regional and national levels.^{3,4}

The paper embodies the initial integrated study on parts of western Ghats from human ecological viewpoints, aimed at holistic understanding of biodiversity, interrelationships of less privileged people with vegetational resources from ecologically changing semi-evergreen and evergreen forest patches by taking into consideration their agronomic, social and cultural practices.^{5,6}

It deals with the basaltic terrain of Sahyadri hill ranges, slash and burn cultivation (shifting agriculture), simple eco-friendly practices of sowing, harvesting, Winnowing, storage and conservation of traditional varieties by marginal farmers who seem to have been propelled into valley cultivation during the recent past.

Western Ghat which harbour many rare, endangered plant species, and one of the hot spot of the world, having major share of the planet's green cover under severe threat. Knowledge of utilization of plants should reach to ordinary people, which is the first step towards equipping them to be effective custodians of their own environment.^{7,8} Against this background, the present study is necessary for obtaining insights for interpretations of Agricultural evidences recovered by

systematic explorations conducted at various river valley settlements. The paper deals with selected economically and culturally important plant resources amiable to present and future intensive exploitations in parts of Sahyadris in Maharashtra.^{9,10}

Most of the plant resources are already well known medicinal plants. Antiquity of many of these plant species is known from their archaeological, literary and historical records.^{11,12} Some of these could serve as potential future domesticates and need to be encouraged at village school and community level for special caring and commercial utilization on wider scales locally (in situ.), to cope up with the livelihood and economic needs of our ever-growing countrymen and to slow down flow of people from rural to urban areas. So the purpose of this study was to study and document the ethanoagricultural practices of the native population in the study area particularly ethnic communities and to discriminate its characters of taxonomic importance, to identify the various plant genera and species, to understand the differentiating characters between plant species, their utilization ,cultural practices and their introduction as future potential food ,fodder, medicinal plants.

MATERIALS AND METHODS-

Along with classical study of plant specimens, efforts were made to document every possible information in digital manner to produce a data base. Field work to explore the Ethanobotanical, and Ethnographical study, To study the methods of conservation of gene pool by the local population.¹³ The present study was conducted in Mulshi village ranges of sahyadri (Dhangarwadi),mulshi, Mangaon sacred grove ,Panshet backwater,kashedi village,Shedani area.

Collection of voucher plant specimens, Herbarium preparation and identification of specimen were collected to raise a seed bank of cultivars and future potential plant species for genetic conservation of species.

RESULTS :

Table 1 : Priliminary survey of cultivated plants in agricultural practice in study area

Crop	• Rabi (Winter crop)	• Kharip (Monsoon crop)	• Water fed
Oils	<i>Brassica campestris</i>	<i>Arachis hypogea, sesamum indicum.</i>	-
Fodder	<i>Medicago sativa, Trifolium alexandrinum</i>	<i>Themeda</i>	-
Cereals and millets	<i>Hordeum vulgare, Triticum aestivum</i>	<i>Oryza sativa, Sorghum bicolor,Zea-maize, Panicum millaceum, , Panicum notatum, Setaria indica , Eleusine caracana, Echinochloa colonum, Echinochloa frumentaceae, Hordeum vulgare, Panicum psilopodium, Paspalidium flavidum</i>	-
Pulses	<i>Cicer arietinum, Pisum sativum</i>	<i>Cajanus cajan, Lablab purpureus, Vigna aconitifolia, Vigna mungo, Vigna radiata, , Vigna unguiculata.</i>	-

Vegetables	<i>Allium cepa, Brassica capitata, Brassica olerana, Lycopersicum esculentum, Trigonella foenum.,</i>	<i>Abelmoschus esculentum, Coccinia cordifolia, Cucumis melo, Cyamopsis tragonoloba, Ipomoea batatas, Solanum melongena, Lablab purpureus, Lagenaria siceraria, Luffa acutangula, Momordica charantia</i>	<i>Colocasia esculentum</i>
Condiment and spices	<i>Allium sativum, Coriander sativum, Cuminum cyminum, Foeniculum vulgare.</i>	<i>Capsicum annum.</i>	
fruit		<i>Cucumis sativus, Cucurbita maxima</i>	<i>Citrullus fistulosus, Citrullus lanatus, Lagenaria siceraria, Luffa cylindrical, Momordica charantia., carica papaya,</i>
Plant Resource	Use	Plant Resource	Use
<i>Acacia nilotica</i>	Gum-Used in sweet meats. Fresh gum is eaten and liked by children.	<i>Aegle marmelos</i>	Fruits- Ripe ones eaten raw. Unripe ones boiled and eaten without any other treatment.
<i>Alangium salvifolium</i>	Fruits- sour sweet, mucilaginous, ripe berries are eaten.	<i>Amaranthus caudatus</i>	Leaves cooked as vegetable
<i>Annona reticulata</i>	fruits eaten ripe	<i>Annona squamosa</i>	Fruits eaten ripe.
<i>Anogeissus latifolia</i>	Gum-An ingredient of sweets, collected and stored in summer.	<i>Asperagus adscendens</i>	Fleshy tuberous roots are eaten as food. Eaten raw
<i>Azadiracta indica</i>	Ripe fruits eaten.	<i>Bambusa arundinacea</i>	Stem –young tender shoots cooked as vegetable.
<i>Pithecellobium dulce</i>	Red juicy aril is eaten.	<i>Solanum indicum</i>	Fruits- raw fruits cooked in to vegetable.
<i>Sterculia urence</i>	Fruits- Ripe fruits eaten.	<i>Syzygium heyneanum</i>	Fruits- Ripe fruits eaten.
<i>Terminalia tomentosa</i>	Leaves fed to tasar silkworm to produce silk	<i>Terminalia arjuna</i>	Leaves fed to tasar silkworm to produce silk, bark used for skin diseases
<i>Wrightia tictoria</i>	Sap- Sap from stem taste like butter.	<i>Zizyphus numularia</i>	Fruits- Fresh fruits eaten, dried.

Plants observed-	Number	%
Medicinal plants	355	
underground parts	73	20.5
leaves	222	62.5
flowers	36	10.1
fruits	309	87
seeds	38	10.7
famine food	169	47.6

DISCUSSION :

The Global Convention on Biological Diversity as well as the Indian Biodiversity Act (2002) give explicit recognition to community conservation. The Indian Act also provides for recognizing and rewarding contributions of tribal and rural families to both in situ and ex situ conservation of valuable biodiversity.^{15,16}

We know little of the thousand of plant species which may disappear before they are even discovered. A wealth of information on plants exists in the rich though fast disappearing knowledge systems of the tribal and aboriginal societies the world over. Ethnobotanists from their discoveries can offer clue laden trails for modern researches on such plants – an exercise which has already proved promising.^{16,17}

The great potential of wider usage of plants used by some elements in societies tribes, and rural especially economically and socially backward farmers in mankind's problems like hunger and health has been fully realized by the results of studies carried out so far, and will be vital in future.^{18,19,20}

Since these farmers are co-existing today with the modern, non tribal population, the use of the word “primitive” for them may not be liked by many of us; however, since they retain maximum of their ancestral culture, habits and mode of living, as such to differentiate them from the rest of the human population of the State, viz., the urban and the rural, this term “primitive” has been prefixed to them, but they are civilized. But this population and practices are becoming rare due to modernization and communication means.²¹ The ways and means of agricultural practices have been changed due to use of plastic and modern tools. So the primitive methods though are observed may vanish soon in few years. There is urgent need to document details of these processes since the new generation hardly knows the details of it. The conventional floristic work does not easily solve the critical

problems of plant identification, documentation of plant resources since all the information is given in technical, botanical terms.

Output of this work will provide a useful reference of species which are utilized by native population, with high nutritional value and some have potential to become future resource plant. Thus such data can be used for academic or commercial purpose.

This work will contribute in maintaining the register of native vegetation as important plant resources, which will help to formulate the strategies for taxonomic studies, preparation of data base, in the field of Bio informatics, Conservation of plant species of economic importance.

Outcome of this work will provide a practical introduction of the techniques of documentation in plant sciences to study the plant resources. Therefore such research is the need of time today and future. Present study concludes that most of these plants call in situ conservation within ecological niches, habitat conservation and commercial propagation for providing means of livelihood to local populace which can slow down flow of people towards urban areas.

REFERENCES

1. Agarwal, V.S. & Brain Ghosh (1985). Drug Plants of India : Root Drugs, Kalyani Publishers, New Delhi.
2. Champion H.G. and S.K. Seth. 1968. A Revised Survey of the Forest types of India. Delhi.
3. Drury, H. 1873. The Useful Plants of India. (Repr. Ed. William H. Allen & Co. London)
4. Cooke. T. 1901-1908. The Flora of the Presidency of Bombay. Vols. 1-3 London (Reprinted 1958).
5. Gadgil M. & V.D. Vartak, 1973, Groves dedicated to the Gods. The illustrated. Weekly of India 35: 19-21.
6. Gadgil M. & V.D. Vartak, 1976, a. Sacred groves of Western Ghats. Econ. Bot. 30 (2): 152-160.
7. Gadgil M. & V.D. Vartak, 1976, b. Sacred groves of India – A plea for continuous conservation J. Bombay Nat. Hist. Soc., 72 (2): 314-320.
8. Gammie, G.A. 1903. A note on plants used during famines and seasons of scarcity in the Bombay Presidency, Rec. bot. Surv. India 2: 171-196.
9. Ghate, V.S. & V.D. Vartak, 1990 Biodiversity in the flora of Maharashtra : It's status, evaluation and conservation. Indian Environmental Society, New Delhi : 201-207.
10. Ghate, V.S. & Vartak, V.D. (1996) Socio-economic and Domestic Utilization of Forest Tree Resources by Tribal Communities in Western Maharashtra, Ethnobotany in Human Welfare, 329-330.
11. Jain, S.K. (1991b). Dictionary of Indian folk Medicines and Ethnobotany Deep publications, New Delhi.
12. Jain, S.K. (Ed.) (1981), Glimpses of Indian Ethnobotany, Oxford & IBM publishing Co., New Delhi.
13. Kamble s.y. & s.g.pradhan. Ethnobotany of "Korkus" in Mharashtra. Bull Bot. Surv India. Vol. 22 (1-4): 201-202.1980.
14. Kamble. S. Y., e. A. Singh., t. N. More, s. R. Patil & s.g.pawar (2006) Ethnobotany of

- Thaker Tribe of Maharashtra Accepted for publication in Journal of Economic and Taxonomic Botany Jodhapur.
15. Pandey D.N. (2002), Sacred Forestry: The case of Rajasthan, India. Sustainable Development International available at <http://www.sustdev.org/expore/forestry/SDI3-31.pdf>.
 16. Singh E.A. More T.N. The study of sacred groves from Pune district and their socio-religious values. Proceedings of National Seminar on Ethno botany and Sacred Groves role in Conservation Strategy. PP5, 2002.
 17. Singh E.A., Kamble S.Y. & More T.N.. Studies in biodiversity of newly reported sacred groves from Pune district Proceedings of the National Conference on Recent advances in Plant Microbial and Environmental Biotechnology PP. ISO-192. March 2003.
 20. Vartak, V.D. 1959. Some edible wild plants from hilly regions of Poona dist., Maharashtra. Bombay nat. Hist. Soc. 56 (1): 9-25.
 21. Vartak. V.D. 1981. Observations on wild edible plants from hilly regions of Maharashtra and Goa. Resume and Future prospects. Glimpses of Indian Ethnobotany (Edt. S.K. Jain) Delhi pp. 261-271. Watt. G. 1889-1893