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Ethnobotany Employment and Empowerment of Rural areas

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Abstract: *In our country besides of dividing in many sub-category of cast and racism, a normal man also divided into urban man and rural man, within sub category literate and illiterate persons. There are well established societies and source of income for the literate urban man but what happens with those who even have ability to be literate but their circumstances never allowed them to make himself a literate man. However, this division of literacy was done by man himself; even God gave the equal knowledge about their surroundings and better living to both of them.*

The man and plants:

Our knowledge of intimate relationship between man and his immediate surroundings has been passed on to us mainly through surviving traditions (Jain, 2004). In India there are about 550 tribal communities covered under 227 ethnic groups residing in about 5000 villages in different forest and vegetation types (Sikarwar, 2002). These people practice herbal drugs for the treatment of different ailments, the knowledge of which they have acquired from their ancestors from the previous to next generation. The human plant intimate relation dates back to the origin of human on this planet. With the development of social sense in primitive men, their dependence on the plant resources increased, not only for food, but also for fodder, fuel, drug and shelter. Although we are living in 21st century and modern civilization has gained its momentum but still there are several tribal pockets, not only in India but also in other parts of the world, where these people are still practicing traditional knowledge and culture. Botanically derived medicinals have played a major role in human societies throughout history and prehistory (Lewis and Elvin – Lewis, 2003) but with the development of modern civilization, use of allopathic drugs are at increasing rate and use of herbal drugs is either restricted to few communities or areas only. The traditional medical system is declining at a faster rate, but there are several tribal pockets where use of herbal drugs is the cheapest and only way for the treatment of different ailments.

Ancient healing culture and their heritage:

This system of treatment of diseases based on traditional knowledge coming from generation to generation purely based on herbal drugs is known as 'Traditional medical system' and the system of treatment performed by tribal communities or ethnic groups is known as 'Medico-Ethnobotany'. The traditional healers or medicine-men have their own diagnostic and treatment systems, which they have acquired from their ancestors and long history of use pattern. The information about medicinal plants is mainly confined to the village physicians, chieftains of different communities and older members of the family.

The ancient literatures clearly indicate that there were several medicinal plants used in the treatment of different diseases. The Assyrians in about 4000 B.C. used Clavicepspurpureafor the control of bleeding after childbirth. Plants like AtropabelladonaandHyoscymusnigerhave been reported by the descendents of Sumerians in 3500 B.C. for the treatment of pain and fever. The Chinese herbalists used Ephedra known as 'Ma Huang' in respiratory troubles and Cannabissativain rheumatic pain and madness. The Egyptians used leaves of Cassia aungstifolia for the proper movement of bowel.

In vedas 67, 82 and 288 medicinally important plants have been reported in 'Rigveda', 'Yajurveda' and 'Atharvaveda' respectively clearly indicating the richness of India's traditional medical system. Some of the important examples of these plants are Terminalia bellirica(Bahera) reported in 'Rigveda' and 'Atharvaveda' used in cough, cold, leprosy, diarrhoea, spleen enlargement and as purgative; Piper longum(Pippali) reported in 'BhavprakashNighantu' and was used in respiratory troubles, fever, leprosy, piles and spleen disorders; Cynodondactylon(Dub ghas) claimed to check bleeding from cuts and wounds; Commiphorawightii(Gugal) in the treatment of fracture, inflammation, piles and worm affections and Centellaasiatica(Mandukparni) in skin diseasees and as nerve tonic have been reported in 'Atharvaveda'.

In 'Maitrayani Samhita' and 'Kathak Samhita' Adhatodavesica(Adusa) was reported to be used in leprosy, tuberculosis, blood disorders, cough and cold. In 'Sushrut Samhita' Holarrhenaantidysenterica(Kutaj) has been reported for the treatment of piles. In 'NighantuRatnakar'

Indigoferatinctoria(Neel) was claimed as an antileprotic agent. In 'ShankhayanGrahyasutra', it was reported that oil of Madhucaindica(Mahua) was used in headache and skin diseases. In 'Rigveda', Bambusaarundinacea(Bans) has been reported to be used in cough, cold, diarrhoea, blood disorders and fever.

The legacy of INDIA:

In India the traditional medical system has a long and glorious history with its important herbalists and physicians like Patanjali, Nagarjuna, Atreya, Sushruta and the Charak, which were legendry, figures in the Vedic period (3500B.C.- 2000 B.C.). 'Somras' was one of the most important beverages consumed by so called 'Devta' during vedic period, although there is no authentic proof for constituents of 'Somras' but recently 'National Geographic Broadcasting' has claimed that it was made up from Ephedra sp. , Cannabis sp. and Opium sp. 'Somras' was taken as aphrodisiac, stimulant and general health tonic. Ephedra (named as 'Somlata') has been reported in 'Rigveda', 'Yajurveda' and 'Atharvaveda' and claimed as 'King of all drugs'.

Introduction of Ethenobotany:

The intimate relation between the ethnic groups/Tribal communities and plants gave birth to an interdisciplinary branch of science known as 'Ethnobotany'**.** In ethnobotanical studies, the major contribution has been in the field of medicine. A large number of ethnomedicinal information remained endemic to certain regions or people due to lack of communication (Nisha and Sivadasan, 2007). Several plant-based life saving drugs like ephedrine (obtained from Ephedra sp.), reserpine (obtained from Rauvolfiaserpentina), cocaine (obtained from Erythroxylon sp.) etc., which are important in modern age have come from ethnomedicinal knowledge. About fifty years ago, the modern man looked forward towards the tribal groups, living very close to nature to save, document and use the herbal drugs. Currently there is phenomenal increase in screening of medicinal plant preparations and consumption of plant derived preparations as safe alternative to conventional medicines. As a result there is heavy flow of plant-based medicines including herbals, botanicals, medicinal plants and phytopharmaceuticals (Subramanyam, 2007).

Kirtikar and Basu (1935) has compiled vast information as well as established indigenous Ayurvedic literature like Charak Samhita, Sushrut Samhita, Bhavprakash, Vagbhatta, Yogratnakar and even Unani medicine. India with its glorious past of traditional medical system and use pattern of different plants is one of eight major centres of origin and diversification of domesticated taxa (Siva, 2007), having rich biodiversity and is one of the world's twelve megadiversity countries.

The preventive, corrective and curative approaches of health is the basic strength of Indian Systems of Medicines (ISM) which are mostly plant based and comprise over 8000 medicinal and aromatic plant species. In India, about 1.5 million practitioners of ISM use around 25,000 effective plant-based formulations (Mehrotra and Mehrotra, 2005). According to the All India coordinated project sponsored by the Ministry of Environment and Forest, New Delhi, 40% of 16,000 recorded flowering plants in India have ethnomedicinal value, whereas only 10% of these are used in drug and pharmaceutical industries. The intrinsic importance of these medicinal plants can very well prove as a potential source of new drugs (Pushpangadanet al., 1997).

Recent explosions of interest on ethnobotany particularly 'Ethnomedicine ' have been driven by a number of causes. First, the accelerated loss of indigenous plant lore has focused attention on the need to document indigenous medical traditions before they disappear forever (Cox, 2000a and b). Second, many biodiverse rich countries are now considering indigenous plant lore as part of their national heritage. Third, natural products research, particularly due to an increased interest in the relationship of small and medium sized proteins to genetic targets is again on the rise. Fourth, a number of new drugs derived from plants, including Taxol and its derivatives for ovarian and breast cancer, have again awakened interest in using indigenous knowledge to guide drug discovery efforts. Fifth, western medicine has become more open to alternative approaches to healing including revival of interest in traditional medical practices, including Ayurvedic medicine, acupuncture, Chinese herbal medicine, Kampoh etc.

Jain (1987) has classified the man-plant relationship into – Abstract and Concrete groups. The abstract deals with various aspects like faith in good or bad powers of plants, taboos, avoidances, sacred plants, worship and folklore, while the concrete relationship is mainly concerned with material culture such as in food, medicine, agriculture, art, trade, domestication, conservation, paintings, carvings, decoration and other domesticated uses.

In the developing regions where the industrialization has not gained its momentum and ecological disturbances are lesser, the man with its biological environment is more intimately related.

Along with other uses, plants also have cultural and mythological importance. Long term changes in vegetation affect culture and language (Hebda and Mathewes, 1984; Meggers, 1977). Particular plants may exert dominant influences upon cultural beliefs and art, be they hallucinogenic (Dobkin de Rios, 1974; Jain, 1986) or major crop plants (Hanks, 1972; Nigh, 1976). Their behaviour is read as potents of the weather, harvests, or community health and their responses to manipulation serve for divination (Alcorn, 1984a). Vegetation oriented culture and sociology developed in different parts and still there are several ethnic communities which are very close to nature and have their own beliefs culture and use pattern of different plants. Proper attention to the areas for the documentation of herbal treatment systems should be given to save the knowledge gained by thousand years of experience. Important plants used in medicine and religious ceremonies are of spiritual significance, have been recorded by Andoh (1986). Rai Chaudhary and Pal (1981) have discussed the plants used in religion and mythology. Dube (1995) discussed in detail the sacred plants associated with many festivals such as Ficusreligiosa 'vat' in 'Vat Savitrivrat', Cynodondactylon'durva' in 'durvaashtami', Ocimum sanctum 'tulsi' in a number of rituals.

Role of Rulals/Tribals and heritage:

The knowledge and cultivation techniques of such highly important medicinal plants are now very demanding . Many important medicinal and other economically valuable plants get vulnerable or endangered. The rate of extinction of medicinally important plant species is further accelerated by habitat degradation, illegal trade practices, loss of regeneration potential of degraded forests, policies and regulations, due to overexploitation or other anthropogenic activity or they have become endemic to their locality. This factor poses a serious threat to the genetic stock and the biodiversity of medicinal plants. The major challenges today before our country is to maintain medicinal plant harvest and trade within sustainable levels. Our destructive activities can no longer be denied, but we also depend crucially on the continuation of our economic activities. More than 90% of plant species used by industry are however collected from the wild source of which 70% involves unorganized harvesting. Wide variations in medicinal quality and content in phytopharmaceutical preparations have been observed. These are influenced mainly by cultivation period, season of collection, plant-to-plant variability in the medicinal content, adulteration of medicinal preparations with misidentified plant species, a lack of adequate methods for the production and standardization of the crop, a lack of understanding of the unique plant physiology or efficacy with human consumption. Generally, herbal preparations are produced from field-grown plants and are susceptible to infestation by bacteria, fungi, and insects that can alter the medicinal content of the preparations (Murch et al., 2000). It is difficult to ensure the quality control as the medicinal preparations are multi-herb preparations and it is difficult to identify and quantify the active constituents (Wen, 2000). Also, there is significant evidence to show that the supply of plants for traditional medicines is failing to satisfy the demand (Cunningham, 1993). Production of high quality and healthy planting material of ornamentals, and forest and fruit trees, and medicinally important plants, has created new opportunities in global trading for producers, farmers, and nursery owners, and for rural employment (George et al., 2007).

Rural development and ethenobotanical heritage:

Now the days the herbal requirements increased widely and globally which gives a golden opportunity to a “Simple Villager” to cultivate such medicinally important plant on large scale and trade to these herbal medicine companies. A huge demand of these plants made a new thought of selective and traditional cultivation of the medicinal plants and gave a new horizon for the rural employment.

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