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Medico-Botanical Study of Certain Plants of Rohilkhand Region, Uttar Pradesh, India

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ABSTRACT: Our ancient ancestors lived and spent their life, in the forests, caves, crevices of mountains, shelter of plants, and open areas in the nature. But they had very much knowledge of valuable medicinal plants and secured their life from various types of serious diseases. They believed that some plants (especially medicinal plants) had divine qualities. Ayurveda and traditional Chinese medicines are well known to the world for their natural ingredients and multiple benefits (Sachan et al., 2015). In view of the innate Indian strengths, which include diverse ecosystems for growth of medicinal plants, farming capacity, strong manufacturing sector, the medicinal plants sector can provide a huge export opportunity after fulfilling domestic needs (Kumar et al., 2003). Nature has bestowed our country with an enormous wealth of medicinal plants, therefore, India has often been referred to as the “medicinal garden of the world” (Katewa and Sharma, 2001). Medicinal plants are being looked upon not only as a source of health care but also as a source of income (Sachan et al., 2015). In the present studies, an attempt was made to find out medicinal plants of Rohilkhand region, Uttar Pradesh, India for their utility for curing different types of human and domesticated animal diseases.

KEYWORDS- medico-botanical, Rohilkhand, Uttar Pradesh, ethnomedicinal, diseases, tribals

I. INTRODUCTION

The increasing demand of medicinal plants has resulted in the depletion of the natural resources mainly for deforestation and other anthropogenic influence. The local uses of plants as a cure are common particularly in those areas, which have little or no access to modern health services. The indigenous traditional knowledge of medicinal plants of various ethnic communities, where it has been transmitted orally for centuries is fast disappearing due to the advent of modern technology and transformation of traditional culture. Therefore, the collection of information about natural flora, classification, management and use of plants by the people holds importance among the ethnobotanists. The present study has resulted in the documentation of 40 medicinal plant species belonging to twenty eight families and thirty seven genera. Altogether, 36 types of ailments have been reported to be cured by using these 40 medicinal plant species among the populace of this region. Most common diseases observed among the populace are diarrhoea, dysentery, malarial fever, bronchitis, and jaundice. The phenology of the medicinal plants especially flowering and fruiting time are of great importance as it will either assist a layman to identify the medicinal plants in field in their specific month or forest wild life manager in their efforts for the conservation of the plant wealth in the area. The study indicates that traditional health care system is an age old practice in this area. This system of ethnic communities is conservation oriented and has great potential. This system needs to be thoroughly studied and documented. Traditional knowledge is transmitted from one generation to another. Study suggests an effective coordination for strengthening medicinal plant sector in Bijnor. This could only be achieved by pooling conservation, biodiversity and health care system together by involving the government, NGO's and research organizations. Collaborative research and integrated efforts are required to preserve the knowledge of indigenous people of traditional healthcare.[1,2]

However, for some plants usage was similar to information already published in the literature. Among these were: *Adhatoda zeylanica*: whole plant given in asthma; *Asparagus racemosus*: root used as galactagogue; *Caesalpinia bonduc*: seeds used for malaria; *Celastrus paniculatus*: oil from seeds used to treat rheumatism;

Curculigo orchioides: rhizome used as an aphrodisiac; Jatropha curcas: tender twigs used as a tooth brush; Lygodium flexuosum: rhizome used to treat rheumatism; Cassia occidentalis: leaves used to treat skin diseases; Paderia foetida: whole plant used to treat rheumatism; Rauvolfia serpentina: root given to treat insanity; Tiliacora acuminata: root used to treat snake-bite; and Tinospora cordifolia: stem-bits given to treat fever.

The majority of the folk drugs are forest species, although a few are cultivated/planted, or are weeds in waste grounds near villages. The usual methods of application are as decoctions, pastes, powders, juices and pills. The addition of ground pepper is recommended in many of the preparations in the belief that it will enhance the efficacy of the drugs. By and large, preference is given to drugs prepared from fresh plants collected from forests. Most of the recipes consist of only one plant species. Two or more drugs are employed in a few cases, presumably because the mixture has a synergistic effect. Moreover, the same plant can be used for more than one disease and a single disease may be treated by several plant species. In such cases it is difficult to assess which plant is actually effective. Only laboratory studies and clinical trials can confirm the efficacy of a particular folk drug in treating the disease. A review of literature reveals that information on the bioactive constituents and pharmacology of most of these plant species is known. However, there seems to be no work on Cissus adnata, Desmostachya bipinnata, Hemigraphis hirta, Lagerstroemia parviflora, Lygodium flexuosum, Sterculia villosa and Telosma pallida. Therefore, an accurate phytochemical, pharmacological, and clinical study on these and other less-studied plants used in folk medicine is suggested. Such studies are of special significance for India, where the medicinal flora is quite rich and a sizeable rural population still depends on herbal drugs for survival. It is, therefore, imperative that the traditional knowledge regarding the uses of plants in medicine from ethnobotanically unexplored areas should be documented systematically before it is lost along with the fast-dwindling traditional culture and natural resources of such areas due to urbanization and industrialization

II.DISCUSSION

Medicinal plants are viewed as possible bridge between sustainable economic development, affordable health care and conservation of biodiversity. The present paper deals with enumeration of medicinally important plants grown in Rohilkhand region of Uttar Pradesh for treatment of different ailments such as cold, cough, fever, gastro intestinal disorders, etc. This study provides immense scope for biochemical analysis and screening of the active principle of the medicinal plants present in Uttar Pradesh for futuristic growth in the field of drug development. 1. Introduction There has been a shift in universal trend from synthetic to herbal medicine recently. It is ancient wisdom that plants have therapeutic value and are used to treat various diseases since Neanderthal age. All ancient civilizations in the world are known to use plants for medicinal purposes. Ayurveda and traditional Chinese medicines are well known to the world for their natural ingredients and multiple benefits. Nature has bestowed our country with an enormous wealth of medicinal plants; therefore India has often been referred to as the medicinal garden of the world [1]. Medicinal plants play an important role in human life to combat diseases since time immemorial. The rural folks and tribals in India even now depend largely on the surrounding plants/forests for their day to day needs. Medicinal plants are being looked upon not only as a source of health care but also as a source of income. The value of medicinal plants related trade in India is of the order of 7.5 billion US dollar and is further increasing day-by-day. The international market of herbal products is estimated to be US \$62 billion. India share in the global market of medicinal plants trade is less than 0.5%. In view of the innate Indian strengths, which include diverse ecosystems for growth of medicinal plants, technical/farming capacity, strong manufacturing sector, the medicinal plants sector can provide a huge export opportunity after fulfilling domestic needs [2]. The government of India has recently setup a national level body, the NMPB for the growth and development medicinal plants sector (MPS) in the country. There is a need to streamline and strengthen MPS with a view to promote integrated development by coordinating , stimulating production, processing, marketing and establishing a sound infrastructure of the sector in the country. Government of India aims to make the cultivation of medicinal plants and its sustainable management, a people movement [3]. The varied agro-climate conditions in India make it suitable for growing a wide range of valuable medicinal plants. The production of medicinal plants being[3,4] labor intensive generates increased employment opportunities for the farmers particularly the rural masses/tribals and enhances their incomes. Growing medicinal plants is much more remunerative as compared to growing cereals, horticulture crops etc. Indian herbal market is rising sharply and the herbal market has an annual compounded growth rate of 20 and 25%, respectively. India is followed by china as the largest producer of medicinal plants having more than 40% global diversity. Worldwide, the ayurvedic industry is put at \$3 billion and is slowly gaining acceptance as an alternative system of medicine and health care. The world health organization (WHO) has projected that the

global herbal market will grow to \$5 trillion by 2050. The annual turnover of the Indian herbal medicinal industry is about Rs. 7,500 crore as against the pharmaceutical industry's turnover of Rs. 14,500 crores with a growth rate of more than 15 percent. India has a vast and rich resource of herbal raw materials and it can create a niche for itself in the global herbal market if the domestic industry produced quality products of international standards [4].

III.RESULTS

The most commonly represented families with respect to ethnomedicinal plants used by tribal people of the area are Fabaceae (16), Euphorbiaceae (9) and Asteraceae (8). Though, more than 154 different diseases were recorded to be cured by medicinal plants in the area, the most reported use was for wounds, fever, cough and cold, stomach infections and gastric trouble, skin trouble, piles, rheumatism and snake and scorpion bite. The results of growth form analysis of ethnomedicinal plants of the area showed that herb made up the highest proportion being represented with 44 species (31%), followed by tree (42 species, 29%), shrub (22 species, 15%), climbers (17 species, 12%), under shrub (16 species 11%) and succulents (3 species 2%). This finding is similar to the general pattern observed in most medicinal inventories (Giday et al., 2003, 2007) where herbaceous medicinal plants dominate. Amongst 143 plant species surveyed for their ethnomedicinal value, 31 species were found to be infected by different foliar fungi. Amongst different foliar fungi, *Pseudocercospora* sp was recorded to cause infection to most of the medicinal plants. Besides, some plants were found severely infected by sooty moulds covering the whole canopy of the tree like *Acacia catechu*, *Terminalia bellerica* and other plants. Sooty mold is a charcoal black fungus that appears as a black coating on the surface of leaves, fruits, twigs and branches of many deciduous and evergreen shrubs and trees. This fungus is not pathogenic to plants but obtains its nourishment from insect honeydew or on exudates from leaves of certain plants. Typically, sooty mold growths are composed of fungal complexes made up of ascomycetes and fungi imperfecti. The dark color of sooty mold growth is due to the presence of melanoid pigments in the cell walls of the hyphae that make up the sooty mold colonies. On leaves, this coat of mold screens out light and reduces the plant's capacity to produce food.

The presence of such a large number of ethnomedicinal plant species indicates that the area has a very high diversity of medicinal plants and is a site for various indigenous knowledge. The study also indicates that the ethnic people of the area largely depend on the wild medicinal plants for cure of their ailments. Due to the lack of the government health facilities in the region, the people are largely dependent on the traditional health care system. This practice would definitely affect the availability of these plants and some of the plants would become threatened in near future. Thus, the area faces over exploitation of these plants by traditional practitioners. Moreover, some factors viz. deforestation, agricultural expansion, overgrazing and frequent drought were observed by the authors as main threats for luxuriant growth of medicinal plants. The effort to conserve medicinal plants in the region area was observed to be very poor. Hence, efforts must be taken to protect these species in this area involving the local communities in preservation and conservation aspects; otherwise there would be the possibility of losing this wealth of ethnomedicinally important plants of the area in near future. Although, some traditional practitioners have started to conserve medicinal plants by cultivating at home gardens, though the effort was minimal. Moreover, due to lack of interest among the younger generation of tribes as well as their tendency to migrate to cities for lucrative jobs, this wealth of knowledge on ethnomedicinal plants of the area may be lost. Hence, proper attention is urgently required to scientifically validate the information gathered on ethnomedicinal plants of the area through pharmacological and reverse pharmacological investigations. The area also appears to be nursery of phytoparasitic fungal forms. Most of the common medicinal plants were found severely infected by foliar fungi. The climatic condition of the area is congenial for the growth of medicinal plants as well as for the foliar fungi also. Amongst different fungal forms *Pseudocercospora* sp showed broad host range for infection to most of the medicinal plants. This may be due to its ability to tolerate a spectrum of secondary metabolites present in medicinal plants. The symptoms produced in severely infected medicinal plants would cause damage of histological tissues and reduce the photosynthetic area of the leaves. Hence, there would be decline in quantity of active secondary metabolites and change in chemical profile of the ethnomedicinal plants due to host-pathogen interactions. There are some reports on such decline of quantity of active components of different medicinal plants used by pharmaceutical firms (D'Aulerio et al., 1995; Chutia, et al., 2006; Pati et al., 2008; Shivanna and Mallikarjunaswamy, 2009). Moreover, leaves are the main centre of the metabolic activities of the plants. Hence, such infections may also affect the secondary metabolites of raw materials of other parts of ethnomedicinal plants. There are also some reports on

transformation of medicinally important active components to another undesirable form due to fungal infection (Wakdikar, 2004). In view of these facts, there is urgent need to investigate disease cycle of the infected ethno medicinal plants of the area in collaboration with plant pathologists. [5,6]

IV.CONCLUSION

There are also some reports on transformation of medicinally important active components to another undesirable form due to fungal infection (Wakdikar, 2004). In view of these facts, there is urgent need to investigate disease cycle of the infected ethno medicinal plants of the area in collaboration with plant pathologists. In normal host, pathogen interaction, the infecting fungi secrete different macerating enzymes for their establishment in the hosts and later on they also produce different types of toxins for degradation of living protoplast of the host. These fungal toxins are systemic in nature and may be easily translocated to different parts of the host. Such fungal toxins secreted by the foliar fungi within the ethnomedicinal plants would definitely cause undesirable side effects to the tribes of the area if the infected medicinal plants are used for cure of their ailments. There are also some earlier reports (Hosagoudar et al., 1997; Chakraborty et al., 2002; Shivanna and Mallikarjunaswamy, 2009) emphasizing the increase in proline content of the medicinal plants due to fungal infection. Proline is an important osmoregulator in plants enhanced under stress conditions (Sabry et al., 1995). Efforts should be also made by the government organizations to spray some pesticides on these medicinal plants which are prone to infection. The collateral wild plants which help in perpetuation of the foliar fungi should also be eliminated time to time. The information gathered in this survey from the tribes of Rohilkhand region would be useful for protection of the medicinal plants of the area from fungal infections as well as in devising suitable conservation strategies. This is about ethnomedicinal plants of Rohilkhand region and the foliar fungi causing diseases to these plants.[7,8]

REFERENCES

1. "Rohilkhand | historical region, India". Encyclopedia Britannica. Retrieved 27 April 2019.
2. ^ Gommans, Jos J.L. (1995). *The Rise of the Indo-Afghan Empire: C. 1710-1780*. BRILL. p. 219. ISBN 9004101098. The designation Rohilla developed during the seventeenth century as a fairly broad notion of the people coming from Roh or Rōh, corresponding roughly with the mountainous terrain of the eastern Hindu Kush and the Sulaiman Range. Only in the seventeenth-century Indian and Indo-Afghan works is Roh used as a more specific geographical term which corresponded with the territory stretching from Swat and Bajaur in the north to Sibi and Bhakkar in Sind, and from Hasan Abdal in the east to Kabul and Kandahar in the west.
3. ^ *An Eighteenth Century History of North India: An Account of the Rise And Fall of the Rohilla Chiefs in Janbhasha* by Rustam Ali Bijnori by Iqtidar Husain Siddiqui Manohar Publications
4. ^ *Imperial Gazetteer of India* by W M Hunter
5. ^ Agrawal, Ashvini. *Studies in Mughal History*.
6. ^ Playne, Somerset; Solomon, R. V.; Bond, J. W.; Wright, Arnold. *Indian States: A Biographical, Historical, and Administrative Survey*.
7. ^ Rathod, N. G. *The Great Maratha: Mahadaji Scindia*.
8. ^ Chaurasia, Radhey Shyam (1947). *History of Modern India: 1707 A.D. up to 2000 A.D.*



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