

Observations on the Folk Medicinal Uses of the Plant Latex from Banaras Hindu University Campus, India

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ABSTRACT

The present study presents the folk medicinal uses of the plant latex from Banaras Hindu University campus, which spreads over 1,350 acres of land area. A total of 9 plant species of 6 genera belonging to 5 families were recorded on the university campus whose latex are used as folk medicines against diseases such as eczema, ringworm, itch, leprosy, warts, toothache wound healing, pimples and boils, piles, diarrhoea, dysentery and rheumatism. Euporbiaceae and Moraceae are the dominant families of the plants on the university campus whose latex is used as folk medicines.

Keywords: Banaras Hindu University, Folk Medicine, Pandit Madan Mohan Malaviya, Plant Latex

I. INTRODUCTION

Herbal medicines represents probably the first and certainly the oldest system of human health care, and almost all civilizations and cultures have employed plants in treatment of human diseases. According to the World Health Organization 80% of the population of developing countries relies on traditional medicines for their primary health care needs. The rural people of India are still dependent on traditional medicines for their health care and treatment of diseases Singh [1, 2]. Out of more than 8,000 plant species used in India, many of them are used for their medicinal values by the rural people and tribals to cure their diseases [3]. The curative properties of the medicinal plants are due to the presence of various complex chemical substances of different composition present as secondary metabolites in one or more parts of these plants. Several studies have been conducted to explore the folk medicinal uses of plants and their parts in the eastern region of the Uttar Pradesh state of India [4-11]

Banaras Hindu University which is the largest teaching and residential university of Asia was founded by great freedom fighter, social reformer and educationist Pandit Madan Mohan Malaviya in 1916 during the Indian freedom movement as a national university with donations from both the rich and the poor. Lord Hardinge the then Governor General of British ruled

India laid the foundation stone of the university on 4 February 1916. This vast university presently has two campuses, 4 institutes, 16 faculties and 140 departments, 4 advanced centres and 4 interdisciplinary centres [12]. The newly established fourth institute of the university named Institute of Environment and Sustainable Development (IESD) has been founded by internationally renowned Ecologist Professor J. S. Singh. Several decades old Banaras Hindu University main campus hosts a large variety of plant species [13]. Studies have been conducted to assess the medicinal floristic wealth of the university campus [14, 15]. However, the present study was undertaken with objective to explore the medicinal uses of the latex of plants growing on the Banaras Hindu University campus by the rural people living in villages near the university campus.

II. METHODS AND MATERIAL

Site Description

Banaras Hindu University campus (Fig. 1) which spreads over 1,350 acres of land area is located about 5 km south of Varanasi city on the western bank of sacred Ganges River (25°18' N latitude and 83° 1' E longitude), on levelled topography at an elevation of 76 m [16]. The campus is covered with alluvial deposits of river Ganges. Soil is fertile and sandy loam in texture.

The climate is Tropical monsoonal type with three distinct seasons; the cold (November to February), the hot (March to mid-June), and the rainy (mid-June to September), while October is regarded strictly as transitional month. The diurnal range of temperature ranges as average between 13° C and 14.5° C in the cold and hot months. The highest monthly temperature is recorded in May, varying between 32° C and 42° C. The annual rainfall is around 1000 mm [17].

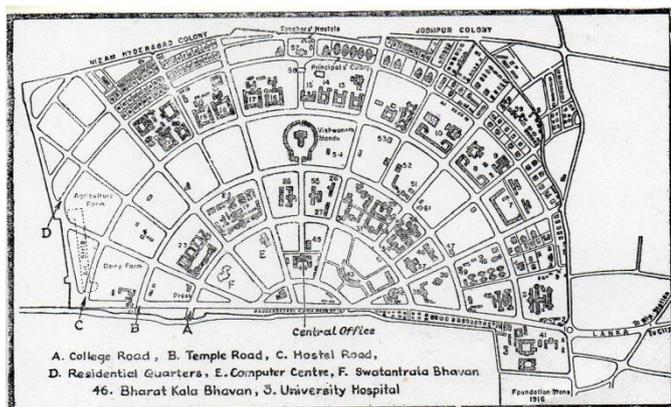


Figure 1: Map of the Banaras Hindu University campus

Methodology

The present study is based on intensive field survey conducted between July 2006 to June 2015 from time to time in different seasons on the Banaras Hindu University campus for the observations and collections of vascular plant specimens for the exploration of vascular and medicinal flora of the university campus. During the field survey it was observed that rural people living in the villages near the university campus like Seer Govardhanpur, Bhagwanpur, Chhittupur,

Madarwaa, Sushwahi, Karmanveer, Akhri, Nasirpur, Jangampur, Narayanpur, Nuaa, Narottampur, Madhopur, Tadia, Bachchaon, Khanao, Brindavan, Tikari, Kandwa, Avileshpur, Kanchanpur etc. visit the university campus to collect and use the plant latex for the cure of different diseases. The folk medicinal use of plant latex is based on interviews with these rural people. The native informants i.e. *Vaidya* and elderly people of villages were also consulted to confirm the folk medicinal uses of plant latex. The plant specimens were identified through various sources [18-20]. Based on the habit the recorded plants were categorized into herb, shrub and tree. The taxa were arranged to families according to the APG III (2009) classification [21].

III. RESULTS AND DISCUSSION

Folk medicinal uses of the latex of plants from Banaras Hindu University campus is presented in the Table 1. A total of 9 plant species of 6 genera belonging to 5 families were recorded on the university campus whose latex are therapeutically used against ailments like leprosy, eczema, ringworm, itch, wart, toothache, pimples and boils, wound healing, rheumatism, piles, diarrhoea and dysentery. However, compared to the present study on folk medicinal uses of plant latex, Singh (2015a) [1] recorded 14 plant species of 14 genera belonging to 13 families on the Banaras Hindu University campus whose roots are used as folk medicines in treatment of different diseases. Furthermore, a study on folk medicinal uses of leaves from university campus reports 41 plant species of 38 genera belonging to 23 families [2].

Table 1: Folk medicinal uses of the plant latex from Banaras Hindu University campus

S. No.	Plant species	Family	Habit	Local name	Medicinal uses
1.	<i>Argemone mexicana</i> Linn.	Papavaraceae	Herb	<i>Bharbhand</i>	Bright yellow latex obtained from the plant is used to cure eczema and ringworm
2.	<i>Calotropis procera</i> (Ait.) R. Br.	Apocynaceae	Shrub	<i>Madaar</i>	White milky latex of plant is used in treatment of leprosy and eczema
3.	<i>Carica papaya</i> Linn.	Caricaceae	Herb	<i>Papita</i>	Latex obtained from unripe fruit is used against eczema and toothache

4.	<i>Croton bonplandianum</i> Baill.	Euphorbiaceae	Herb	<i>Kala Bhangra</i>	Latex of plant is used for wound healing
5.	<i>Euphorbia antiquorum</i> Linn.	Euphorbiaceae	Shrub	<i>Tidhara sehund</i>	Latex is applied against eczema, ring worm and toothache
6.	<i>Euphorbia hirta</i> Linn.	Euphorbiaceae	Herb	<i>Duddhi</i>	Fresh latex is used in treatment of warts. Latex is also used to remove thorns from skin
7.	<i>Ficus benghalensis</i> Linn.	Moraceae	Tree	<i>Bargad</i>	Latex of plant is used externally in treatment of toothache and rheumatism. Latex is taken orally against piles, diarrhoea and dysentery
8.	<i>Ficus racemosa</i> Linn.	Moraceae	Tree	<i>Gular</i>	Latex is used externally for treatment of pimples and boils. Latex is taken orally against piles
9.	<i>Ficus religiosa</i> Linn.	Moraceae	Tree	<i>Pipal</i>	Latex is taken orally against diabetes. Latex is used externally against swellings

In the study the maximum number of plants i.e. 3 species were represented each by the Euphorbiaceae and Moraceae families. Therefore, the study indicates that Euphorbiaceae and Moraceae are the dominant families of the plants of Banaras Hindu University campus whose latex are used as folk medicines. Folk medicinal uses of the plant roots from university campus reports the dominance of Fabaceae family [1] while the folk medicinal uses of the plant leaves from university campus reports the dominance of Fabaceae, Asteraceae and Lamiaceae families [2].

Study on habit of the plants reveals that of the total recorded species, 5 (55.56%) were represented by the herbs, 1 (11.11%) by the shrub and 3 (33.33%) plant species was represented by the trees. Thus the study suggests that the latex of the plants of herbaceous habit are medicinally more useful than the latex of the plants of woody habits. Studies on folk medicinal uses of the plant roots and plant leaves from Banaras Hindu University campus also reports that the plants of herbaceous habit are medicinally more useful than the plants of woody habit [1, 2].

IV. CONCLUSION

Conclusively it can be said that the latex from nine different plant species growing on the Banaras Hindu University campus are used in traditional system of disease treatment by the rural people of villages near the university campus. Therefore, these folk medicinal plants needs protection on the Banaras Hindu University campus for the fulfilment of the medicinal requirements of the present and future generations of rural population living in villages near university campus. This would also be helpful in inheritance of the traditional knowledge of using plant latex against various ailments from one generation to the other generation.

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