

Ethnomedicinal Plant Use by Locals in Backward Areas of Hardoi District, Uttar Pradesh (India)

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Abstract

In the era of modernization, scientific advancement and technological development in the country, local people in the backward areas of Hardoi district, Uttar Pradesh still depend upon plant based formulation for their day to day health related problems due to lack of proper medical facility at villages. A survey was conducted to document the ethnobotanical/ethnomedicinal plant used by the local people. A total of 50 plants belonging to 35 families and 44 genera were documented in use for day to day health problems/ailments and in other uses like vegetable and cattle concentrates. These plants comprised 22 species each of trees & herbs, five shrubs and three climbers. Thirty one ailments/diseases were cured by these plants species. Leaves were used from 16 species, fruits from 11 species, seeds from four species and rhizome from two species.

Keywords: *Ethnobotany, Plant use, Hardoi*

INTRODUCTION

About 80 % of the Indian population are living in rural and remote localities and are still dependent on traditional medicines for their healthcare (Begum and Nath 2000; Punjabi and Kumar 2002; Camejo *et al.* 2003; Dwivedi 2004; Ploze and Chheby 2004; Agyanar and Ignacimuthu 2006; Bhogaonkay and Ahmed 2007; Kumar *et al.* 2007; Prusti 2007). Reports on ethnomedicinal use of plants were also available from Uttar Pradesh (Khanna, 2002; Singh *et al.* 2002; Maliya 2004; Sharma *et al.* 2010). In the era of modernization, scientific advancement and technological development in the country, local people in the backward areas of Hardoi district, Uttar Pradesh still depend upon plant based formulation for their day to day health related problems due to lack of proper medical facility at villages. In this context, the present study was undertaken to document the traditional knowledge system and practices involved in collection and utilization of different plants and their parts in ethnomedicinal uses.

MATERIALS AND METHODS

The study was carried out in Bharkhani block of Hardoi from July 2009 to June 2010 where primary livelihood of local population is agrarian. The block has only one Government and private hospital each and distance to the district headquarter is more than 60 km. Ethnobotanical information was collected using questionnaire based personnel interviews from 100 herbalists (*Vaidhyas*) and the elderly people as well. Prior to interview, oral consent was taken from the Village Head man/elder. The information collected was on plant use pattern, method of herbal formulation, dose of formulation and processing procedure. During the survey, plant specimens were also collected from the study area and identified with the help of local names.

RESULTS AND DISCUSSION

The study documented 50 plant species representing 33 families and 44 genera used by local people for curing their day to day health problems (table 1). The plant species recorded comprised 22 each of trees & herbs, five shrubs and three climbers. Among the families, Fabaceae was represented by highest number of four species followed by Combretaceae, Euphorbiaceae & Myrtaceae (three species each) and Amaranthaceae, Asteraceae, Brassicaceae, Labiateae, Liliaceae,

Mimosaceae, Moraceae, Poaceae & Zingiberaceae (two species each) while remaining families each were represented only with single species (table 1). Leaves, fruits, seeds, rhizome, flower, bark, tendril, softwood, tuber and plant exudates/extracts like gum, juice, milk and oil were used for preparation of formulation (table 1). Leaves were used from 16 species, fruits from 11 species, seeds from four species and rhizome from two species. Bark, tendril, tuber, soft wood, gum and extract from a single plant species were used. Six species were recorded with two parts and four species with more than two parts were used. Thirty one ailments/diseases (cold & cough, dysentery, fever, headache, burn, dental problem, eye, ear, jaundice, urine, heat stroke, flatulence, dyspepsia, vomiting, diabetic, mental disorder, blood pressure, asthma, swelling, blisters and dog bite) were treated/cured using these 50 plant species. Indigestion & dysentery each had the widest range of options with 10 species followed by cold & cough with seven species each and jaundice, diabetes & several others each with two species. Chronic fever, mouth blister, cholera, urinary problems and others were cured/treated using single species (table 1). Plant formulations were either applied externally (skin, nasal, eye and dental administration) or orally administered and sometimes both. These formulations include mixture of different plant species with either salt/sugar or both. Sometimes milk is also added in addition to salt and sugar. Different parts of a single species were also used to cure different diseases (table 1).

Generally elders had a habit of eating cloves of *Allium sativa* early in the morning with a glass of water to maintain blood pressure while root and leaves of radish was told as very promising against jaundice. Dried fruit mixture of *Terminalia bellirica*, *T. chebula*, and *Embellica officinalis* with salt popularly known as 'Triphala' is consumed against indigestion and dysentery. Alternately bark paste of *Terminalia arjuna* is also consumed to get relief from indigestion. However the doses of these preparations were not standardized but largely administered on the basis of age, physical appearance and intensity of illness of the patient. Children generally were administered with smaller doses than the adult patients or realized appropriate by the local medicine man. The type of disease and level of its severity decide the course and frequency of treatments. Each medicinal plant is used either raw or in dried form. Generally, the underground parts are cut into small pieces, dried and powdered. *Chenopodium album* is the only herb used for vegetable purpose during the winter season where as leaves of *Azadirachta indica* were used for controlling stored insect like weevil. Dried seeds of *Acacia nilotica* and *Gossypium arboretum* were used as cattle concentrate for improving milk fat. This documentation of ethnomedicinal uses of plant species are in conformity with earlier reports (Maheswari 1963; Jain 1991; Sharma *et al.* 2010).

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Table

Table 1: Ethnomedicinal plant use in backward areas of Hardoi (Uttar Pradesh) India

Sl. No.	Family	Scientific Name (Vernacular Name)	Parts used	Formulation
1	Acanthaceae	<i>Adhotada vasaka</i> Nees (<i>Asuaa</i>)	Leaves	Leaves are boiled in water with salt and sugar for 10 minutes. This extract is consumed for 2-4 days, thrice a day for curing cold and cough.
2	Alliaceae	<i>Allium sativa L.</i> (<i>Lahsun</i>)	Cloves	Cloves are taken once a day early in the morning for maintaining blood pressure.
3	Amaranthaceae	<i>Chenopodium album</i> Linn. (<i>Bathua</i>)	Leaves	The tender foliage is used during winter season as vegetable.
4		<i>Achyranthes aspera</i> (<i>Chirchira</i>)	Floral parts	Dried floral parts are burned and the ashes consumed with water to get relief from dysentery.
5	Anacardiaceae	<i>Mangifera indica L.</i> (<i>Am</i>)	Unripe fruits, seeds	Powder of seeds with salt and <i>ajwain</i> (<i>Carum sp.</i>) is consumed to cure indigestion. Unripe fruits are fermented cane juice for three months. The fermented mango formulation is consumed with salt twice in a day to get relief from flatulence and dyspepsia. Alternately 5 ml of the fermented solution called 'sirca' along with salt is also consumed once a day. Whole green mango boiled with water, then crushed and mixed in cold plain water, sugar, cumin and salt, locally known as 'Panna' is consumed during summer for prevention against heat stroke.
6	Asteraceae	<i>Blumea lacera</i> (<i>Burm. f.</i>) DC. (<i>Kukrendho</i>)	Leaves	Leaves are crushed and the 5 ml of this extract is orally administered thrice a day for 2-3 days to control dysentery. This treatment is advised only to child patients.
7		<i>Tagetes erecta</i> (<i>Genda</i>)	Leaves	Warm leaf juice extract applied during as ear drops during pain.
8	Brassicaceae	<i>Brasica campestris L.</i> (<i>Sarsoon</i>)	Oil	The oil smeared on the body as antimicrobial and anti-lice agent. The warm oil is also used during ear problems.
9		<i>Raphanus sativa L.</i> (<i>Muli</i>)	Leaves, roots	Foliage is cooked while radish consumed raw during Jaundice.
10	Caesalpinaceae	<i>Cassia fistula L.</i> (<i>Amaltas</i>)	Fruits	Paste of fruit powder and cow milk is consumed daily against asthma.
11	Cannabaceae	<i>Cannabis sativa L.</i> (<i>Bhang</i>)	Leaves	Paste made from fresh leaves is applied on head to kill lice.

12	Combretaceae	<i>Terminalia arjuna</i> (Roxb.) Wight & Am. (<i>Arjun</i>)	Bark	Paste of bark is taken during indigestion and dysentery.
13		<i>Terminalia bellirica</i> (Gaertn.) Roxb. (<i>Bahera</i>)	Fruits	Mixture of dried fruit powder with <i>T. chebula</i> and <i>Embellica officinalis</i> fruit along with salt (popularly known 'Triphala') is consumed with water during indigestion and dysentery.
14		<i>Terminalia chebula</i> Retz. (<i>Haritaki</i>)	Fruits	Same as above
15	Cucurbitaceae	<i>Momordica charantia</i> L. (<i>Karalla</i>)	Fruits	Fruit juice is consumed against chronic fever and diabetes.
16	Cuscutaceae	<i>Cuscuta reflexa</i> Roxb. (<i>Akash Bail</i>)	Tendrils	Tendrils are boiled in water and solution is consumed during chronic fever.
17	Euphorbiaceae	<i>Embellica officinalis</i> Gaertn. (<i>Amla</i>)	Fruits	Fruit mixed in sugar and water stored for two months in air tight jar and then consumed during indigestion and dysentery.
18		<i>Jatropha curcas</i> L. (Ratan joti/Van- aranda)	Tender twigs	Small cutting of tender twig is used daily morning as tooth stick against dental problem.
19		<i>Ricinus communis</i> L. (Arand)	Leaves, seeds	Leaves warmed with mustard oil on flame and applied on swelling. Seeds cooked with cow milk are consumed to control piles.
20	Fabaceae	<i>Bauhinia purpurea</i> Linn. (<i>Kachnar</i>)	Tender leaves	Tender leaf with ghee is applied on boils for release of pus.
21		<i>Butea monosperma</i> (Lam.) Kuntze (<i>Dhak</i>)	Gum	Gum is applied on mouth blisters.
22		<i>Tamarindus indica</i> L. (<i>Imli</i>)	Ripe fruit	Paste of ripe fruit, leaves of <i>Menitha Sp.</i> and salt is consumed for controlling vomiting, flatulence and dyspepsia.
23		<i>Trigonella foenum- graecum</i> (<i>Methi</i>)	Seeds	Seed paste is applied on body part to cure swelling.
24	Labiatae	<i>Ocimum sanctum</i> L. (<i>Tulsi</i>)	Leaves	Leaf mixed with ginger and black pepper is boiled in water with small amount of salt and sugar around 10-15 minutes. This solution is consumed 3-

25		<i>Mentha piperita</i> (<i>Pudina</i>)	Leaves	4 times a day till the relief from cold and cough. Paste of leaves with salt and green mango fruit is consumed to prevent heat stroke and to control flatulence, dyspepsia, indigestion and vomiting. Leaves are crushed and juice is consumed to cure fever.
26	Lamiaceae	<i>Leucas aspera</i> (Willd.) Linn. (<i>Guma</i>)	Leaves	Leaves are grounded and paste is applied for hair dying. Leaves mixed with ginger and black pepper is boiled in water with small amount of salt and sugar for 10-15 minutes. This solution is consumed 3-4 times till the relief from cold and cough.
27	Lathyraceae	<i>Lawsonia inermis</i> Lam. (<i>Mehndi</i>)	Leaves	Raw slice of onion along with salt or leaf paste with salt and green chili is consumed to prevent heat stroke. Seeds burnt on flame and the smoke is inhaled during tooth pain. Onion paste is also applied to get relief from burn injury.
28	Liliaceae	<i>Allium cepa</i> L. (<i>Pyaj</i>)	Seeds, leaves and bulbs	Paste of seed and oil is head massaged during headache.
29	Linaceae	<i>Linum usitatissimum</i> Linn. (<i>Alsi</i>)	Seeds, oil	Seed powder is fed to lactating cattle for increased lactation and fat.
30	Malvaceae	<i>Gossypium arboreum</i> Linn. (<i>Kapas</i>)	Seed	Leaves are boiled in water and used for controlling allergy. Leaf paste is applied to cure boil. Bark paste is applied 3- 4 times a days for healing wounds. Small cuttings of tender twig called ' <i>datun</i> ' are used daily morning to prevent oral and dental problems. Leaves are also used as repellent against storage insect pest of food grains.
31	Meliaceae	<i>Azadirachta indica</i> A. Juss (<i>Neem</i>)	Leaves, Bark, Twigs	Soft wood is boiled with water to get a extract popularly known as ' <i>katha</i> ' is consumed with betel leaves to get relief from indigestions
32	Mimosaceae	<i>Acacia catechu</i> (Linn. f.) Willd. (<i>Katha</i>)	Soft wood	Dried fruit powder is used as cattle concentrate to improve fat content in milk.
33		<i>Acacia nilotica</i> (Linn.) Willd. ex Delile (<i>Babul</i>)	Fruits	
34	Moraceae	<i>Artocarpus heterophyllus</i> Lam. (<i>Kathal</i>)	Fruits	Immature fruits of Jackfruit mixed black pepper are consumed after a dog bite.

35		<i>Morus alba</i> Linn. (Shatoot)	Leaves	Leaf powder is consumed to control cholera.
36	Myrtaceae	<i>Eucalyptus citriodora</i> Hook. (Liptis)	Tender leaves	Tender leaf paste is smeared on forehead for 10 minutes to get relief from headache.
37		<i>Psidium guajava</i> L. (Amrud)	Leaves	Leaves of with <i>Psidium guajava</i> , <i>Punica granatum</i> and <i>Oscimum sanctum</i> are boiled in water with salt and sugar for 15-20 minutes. The solution is consumed thrice a day till the relief from cold and cough.
38		<i>Syzygium cumini</i> L. (Jamun)	Seeds	Seed powder with salt is consumed to control diabetes.
39	Oxalidaceae	<i>Tribulus terrestris</i> Linn. (Gokhru)	Fruits	Solution of fruit powder is consumed during urinary problem for relief.
40	Papaveraceae	<i>Argemone Mexicana</i> Linn. (Katai)	Milk	Milk is applied twice a day during eye problem.
41	Piperaceae	<i>Piper nigrum</i> Linn. (Kali mirch)	Seeds	The mixture of seed, sugar and ghee (prepared from cow milk) is consumed continuously in eye sight defect.
42	Poaceae	<i>Saccharum officinarum</i> L. (Ghanna)	Juice	Cane juice mixed with mentha leaf is taken once early in the morning continuously at least for 15 days to control jaundice.
43		<i>Vetiveria zizanioides</i> (Linn.) Nash (Khas)	Leaves	Leaf juice with sugar candy and cow milk is taken to cure mental disorders.
44	Punicaceae	<i>Punica granatum</i> Linn. (Anar)	Leaves	Same as given for <i>Psidium guajava</i> .
45	Rhamnaceae	<i>Zizyphus mauritiana</i> Lam. (Ber)	Leaves	Leaf paste is applied on affected body part to get relief from burn injury.
46	Rutaceae	<i>Aegle marmelos</i> (L.) Corr. (Bel)	Fruit pulp	Ripe fruit pulp is mixed in water along with sugar to prepare juice and consumed to prevent heat stroke.
47	Sapotaceae	<i>Madhuca longifolia</i> (Koenig) Mac Bride (Mahua)	Fruit and flower	Ripe fruit consumed fresh to get relief from dysentery. Flowers are crushed and mixed with cow milk and consumed as blood purifier.

48	Solanaceae	<i>Solanum tuberosum</i> Linn. (Alu)	Tuber	Tuber paste is applied on affected body part to get relief from burn injury.
49	Zingiberaceae	<i>Curcuma longa</i> L. (Haldi)	Rhizome	A tea spoon powder (popularly known as 'haldi') is mixed with milk and consumed after cut/bruise injury for fast blood clotting. Turmeric powder is also mixed with dried ginger and jaggery (popularly known as 'Gur') and consumed to get relief from cold and cough.
50		<i>Zingiber officinale</i> Rocs(Adrak)	Rhizome	Same as given above.