

## Documentation and Folklore Use of Medicinal Plants of Hathwa (Gopalganj), Bihar.

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### ABSTRACT

The present communication is an attempt to record the authentic informations about the documentation and folklore use of some medicinal plants of this area. The kavirajas, vaidyas, hakims and countrymen physicians used indigenous system of medicines regarding medicinal uses of various plants of this area. The paper presents comprehensive informations of eleven angiospermic medicinal plants. The reported plants require further clinical investigations.

**Keywords :** Folklore, Medicinal Plants, Hathwa

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### INTRODUCTION

Since the dawn of civilization the plant or plant parts have been used to cure the various human ailments. The use of herbal plants as medicine and food supplements is older than recorded history. Herbal plants have been major source for the cure of human diseases since time immemorial. After facing so many side effects of modern allopathic medicines, world population show keen interest in herbal based products which have been no harmful side effects. With rising awareness globally for health, there is increasing consciousness for the use of herbs for health and beauty.

India has itself more than 25,000 effective plants based formulations used in folk medicine and known to rural communities are available and there are more than half million practitioners of Indian system of medicine use herbal plants in preventive curative and promoting application. Around 10,000 designed formulations are available in the indigenous medical texts. In unani, ayurvedic, allopathic and homeopathic systems most of the drugs are obtained from plant sources (Kochhar, 1998; Prajapati *et al.*, 2003). Over 25% of all drugs dispensed world over include plant constituents (Mehta, 1989).

Medicinal plants have curative properties due to the presence of various complex active chemical substances of different composition like alkaloids, glycosides, resins, volatile oils, gums, corticosteroids and tannins *etc.* (Prajapati, *et al.*, 2003) which are found as secondary plant metabolites in one or more parts of these plants. Nickell (1980) has listed a variety of plant species capable of producing secondary metabolites *in vitro viz.* atropine, diosgenin and ephedrine *etc.*

Indigenous systems of medicines are widely prevalent in the rural areas, tribal belts and urban slums in Bihar since long. The population of such areas has been neglected as far as medicinal services are concerned. Thus the indigenous systems of medicines are easier and cheaper to such people because these are easily available in comparison to modern medicines. For the status of indigenous system of medicines in relation to the modern system of medicines *i.e.* so called allopathy a survey has been made (Kumar *et al.*, 1998). The traditional use of herbs as folk medicine has been a common practice among the people in many countries (Akerele, 1990; Heinerman, 1990.)

## MATERIALS AND METHODS

Hathwa sub-division belongs to district Gopalganj of Saran Commissionary of North Bihar. This district was a part of old Saran district and came into existence on 2<sup>nd</sup> of October 1973. The district Gopalganj is located on the West-North corner of Bihar State and lies in between 26.12° to 26.39° North Latitude and 83.54° to 85.56° East Longitude.

The present work is based on the result of the one year (February 2014 to January 2015) intensive study on the medicinal plants of Hathwa. By consulting different literatures and previous works done in Bihar, a check list of medicinal plants is prepared. For preparing an account of medicinal plants of Hathwa and their status, frequent field trips have been conducted in different seasons. The medicinal plants and their ethnomedicinal informations have been collected during the field trips. Most of the herbarium and experimental works we were completed in the department of Botany, Gopeshwar College, Hathwa, District Gopalganj. The work done during these periods and the methods adopted are summarized in the following headings:

1. **Field survey:** Regular field surveys were conducted in every season during the entire period of research work. The whole study areas were extensively covered during the field survey.
2. **Assesment of the status of medicinal plants:** For the status of species the terms rare, endanger, seldom present, often present, mostly present or in abundant, frequent or less frequent *etc.* are used for a quantitative expressions as described by Ambastha (1969).
3. **Collection of ethnomedicinal informations :** The local persons and the herb collectors were contacted and interviewed to get the first hand information of the medicinal plants and its parts used in different diseases/ailments. These informations were also verified by consulting physicians and medicinemen through literature. During field survey and collection of ethnomedicinal informations, the methods and techniques are followed as given

by Jain (1981), Jain and Sastry (1981) and Jain (1989 & 1994).

4. **Collection of medicinal plants :** During the field works the plants which have medicinal values as reported by local people were collected and identified with the help of standard floras (Haines, 1921-24). Utmost cares were taken during collection of the plants materials during every season. Herbs were collected as whole plant whereas in case of shrubs, climbers and trees only flowering and fruiting twigs were collected.
5. **Identification of collected plants :** I have collected 40 medicinal plants from different regions of Hathwa. Out of these collected plants eleven plants were studied in details, keeping in view their folk medicinal uses.
6. **Herbarium preparations:** The speceimens were spread out neatly on blotting papers in such a way that various parts can easily visible. These specimens were pressed for drying by keeping the blotters every day for six to eight days. After complete drying, the specimens were pasted on mounting sheets. One sheet (28 x 42 cm. in size) was used for one specimen. The specimens were treated with poisonous chemicals like mercuric chloride/formalin (10%) by the help of soft brush to avoid the infection.

### Medicinal Plants in the Folklores and Different Proverbs :

The folklore on several medicinal plants and the formulation developed by using them is well recognized in different ethnic communities living in this area. A number of medicinal plants are well described in these along with their medicinal properties. These folklores should be brought into laboratory for validation. These help in evoking the importance of these species and in their sustainable utilization.

## RESULTS AND DISCUSSION

India has gifted with the rich source of medicinal

plants and traditional Indian societies are well acquainted with herbal medicine. The medicinal plants are widely used by all sections of the populations in India whether directly as folk remedies or through the medicine men because of their less expensive, easily availability and without any side effects. In rural areas of remote villages, where economic conditions are very low, people used the medicinal plants directly or by local methods of preparation. Their folk remedies are not widely common, non-documented properly and it is only transmitted orally. Their mode of uses and prescribed doses are also variable in different seasons, which attract us to collect these knowledges before they lost. It has been found that the supply and demand of medicinal plants increasing day-by-day even after the dominance of the modern system.

The sub-division Hathwa of distt. Gopalganj is rich in interesting floristically and presents a very wide spectrum of medicinal flora. It is important that a systematic exploration of herbal medicine either in the crude or synthesized form may provide a quick and safe remedy and it is only by through inquiry that the merits and demerits of these drugs can be proved and demand be created. further, it is suggested to screenout medicinal properties of these plants and their active principles, clinical trial and finally to ascertain their usefulness.

The detailed study of the above 11 plants belonging to different families, were made during the course of study.

## DETAILED SYSTEMIC ENUMERATION

### 1. *Ageratum conyzoides* L.

**Family:** Asteraceae.

**English name:** Goat weed, white weed, appa grass and floss-flowers.

**Common name:** Bokaghas and bokwa.

**Locality:** Grows as weed everywhere, wild.

**Flowers and Fruits:** Throughout the year.

**Taxonomic Identification:** Plant is annual herb, 30-50 cm; Stem hairy green or purple; Leaves opposite, ovate, crenate and hairy on both

sides; Inflorescence terminal corymb of many small heads; Flowers violet and white; Fruits achenes and minute, 5-angled and hairy.

**Medicinal uses:** Colic, cold post-uterine haemorrhage, hair fragrant and used in place of dettol.

**Parts used:** Roots, leaves and flowers.

**Folk medicinal use:** One tea spoon of aqueous extracts of fresh leaves or whole plant along with 4-5 black pepper and one tea spoon ajwain have been used in early morning for seven days continuously to treat chronic colic, cold and fever.

### 2. *Clerodendrum serratum* L. Moon.

**Family:** Verbenaceae.

**English name:** Bhant.

**Common name:** Bharangi.

**Locality:** Grows in local areas also in the fields of *Cajanus cajan*, wild.

**Flowers and Fruits:** September-January.

**Taxonomic Identification:** Plant is slightly woody shrub with bluntly quadangular stems and branches; Leaves usually three at the node, oblong or elliptic sharply serrate; Flowers blue in colour and many in thyrsus with a pair of acute bracts; Fruit 4-lobed purple drupe.

**Medicinal uses:** Asthma, eye problem, bronchitis, skin disease like leucoderma, leprosy etc.

**Parts used:** Roots, leaves and seeds.

**Folk medicinal use:** The fresh juice of roots and leaves is mixed with honey and fruit of black pepper, used to cure asthma. Leaves are boiled with oil and this oil is used 2-3 times daily to cure swelling in eye. Fresh seeds are used in to cure dropsy.

### 3. *Abutilon indicum* L. Sweet.

**Family:** Malvaceae.

**English name:** Country mallow.

**Common name:** Kanghi.

**Locality:** Commonly grows on waste land, wild.

**Flowers and Fruits:** August-January.

**Taxonomic Identification:** Plant is annual

shrubs 1.5-3 m high; Leaves 2-8 x 1.7-6.4 cm, cordate, lobed, crenate, acuminate or acute, valvately 7-9 nerved, petioles 0.5-4.5 cm long, pubescent, brown; Flowers 1.5 cm in diameter, axillary, pedicels 2-4.5 cm long, pubescent, sepals 5 mm long, ovate and hairy, petals 4 x 5 mm.; Fruits are cocci with persistent sepals but longer, 2 cm in diam., hairy, tip reflexed; Seeds 2 mm long, black and kidney shaped.

**Medicinal uses:** Piles, gonorrhea, toothache and inflammation of bladder.

**Parts used:** Seeds, leaves, roots and bark.

**Folk medicinal use:** Leaves are crushed with water and used with black pepper at the interval of 10 mints to cure sujaak and gonorrhea. Seeds are used in piles, gonorrhea.

#### 4. *Heliotropium indicum* L.

**Family:** Boraginaceae.

**English name:** Indian turnsole.

**Common name:** Hathi sund.

**Locality:** Frequently on damp waste land on road side and drains, wild.

**Flowers and Fruits:** October-March.

**Taxonomic Identification:** Plant is annual, erect, coarse herbs 20-30 cm tall; Branches dichotomous, spreading, succulent; Leaves alternate, 4-8 cm long and 2-5 cm broad, ovate or ovate oblong, hairy, margin distantly serrate, petioles 2-4 cm long; Inflorescence 8-15 cm long; Flowers 4 mm long white or violet, 2-ranked, in long bristly ebracteate spike, sepals 5, persistent, corolla 5-lobed, stamens 5, anthers discreate, style gynobasic; Fruits nutlets; Seeds white.

**Medicinal uses:** Ulcer, wounds, skin affections and sting of insects.

**Parts used:** Roots and leaves.

**Folk medicinal use:** Root paste is very much useful in cough, bronchitis and fever. Leaf juice mixed with turmeric powder is useful to cure ulcer, gonorrhea etc.

#### 5. *Aloe vera* (L) Burm.f.

**Family:** Liliaceae.

**English names:** Barbados aloe, curacao aloe, Indian aloe and jaffarabad aloe.

**Common name:** Guarpatha, Ghikuamr and Ghikumari.

**Locality:** Cultivated for dry land management, wild.

**Flowers and Fruits:** October-December.

**Taxonomic Identification:** A stoloniferous perennial plant with short stem and shallow root system; Succulent thorn leaves in rosette form often crowded with horny prickles on the margins, convex below, 45-60 cm long tapering to a blunt point, surface pale green with irregular white blotches; Flowers vermilion-coloured in racemes; Fruits loculicidal capsule.

**Medicinal uses:** Rheumatic pain, antihelminthiasis, wound healing, burns soothing.

**Parts used:** Whole plant mainly fresh leaves and leaves pulp.

**Folk medicinal use:** Leaf pulp is mixed with equal quantity of sugar and ghee then fried and cooled; 10 gram of this preparation is taken once daily for three months to cure rheumatic pain.

#### 6. *Eclipta alba* (L) Hassk

**Syn:** *Eclipta prostrata* L.

**Family:** Asteraceae.

**English name:** Trailing Eclipta.

**Common name:** Bhangrayia, Kala Bhangra and Rajbhang.

**Locality:** Grows commonly near drains on moist places, wild.

**Taxonomic Identification:** Plant is diffuse or erect perennial herb; Stem diffuse or erect 15-25 cm long, rooting at lower nodes, hispid; Leaves opposite, sessile 2-5 x 0.5-1.5 cm, oblong, lanceolate, tapering at both ends, blackish when dry; Inflorescence is head 5-8 mm in diameter, subglobose, involucre bracts 2-seriate, pubescent; Flowers ligulate and 2-dentate; Fruits achenes, oblong, compressed, tuberculated with a thickened margin.



**Flowers and Fruits:** Round the year.

**Medicinal uses:** Snakebite, skin disease, jaundice, wound healing, leprosy etc.

**Parts used:** Whole plant and leaves extract.

**Folk medicinal use:** About 12 gm whole plant mixed with powder of 4-5 cloves and animal fats (pure ghee) is given to the patient bite by snake for at least six times in an hour till cure. The whole poison will come out through anus. The 1-2 kg. of plant is crushed and juice is extracted by squeezing it through muslin cloth. This is boiled with ½ kg of mustard oil until the water is totally evaporated. This oil is used as liniment over the body to treat skin disease. 5 kg is taken orally early morning in empty stomach for a month to treat jaundice.

**7. *Leonurus artemisa* (Lour.) S.Y.Hu**

**Family:** Lamiaceae.

**English names:** Siberian motherwort and Lion's tail.

**Common name:** Jangali bhang.

**Locality:** Frequently on waste land and roadsides.

**Flowers and Fruits:** September-April.

**Taxonomic Identification:** Plant is annual herbs or undershrubs 30-60 cm high; Stem 4 angled, tomentose; Leaves 4-10 cm long; Flowers pink 1-1.5 cm long in axillary many flowered whorles, calyx 5-nerved, corolla 2-lipped, upper hooded, lower 3-fid; Fruits nutlet 3-quetrous, 2 mm long.

**Medicinal uses:** Irregular menstruation, hypertension and heart disease.

**Parts used:** Whole plant

**Folk medicinal use:** Whole plant extract is used to treat the menstrual disorder in female. It also helps the women expelled a dead foetus and placenta from the womb.

**8. *Carum copticum* Benth. & Hook.f.**

**Family:** Apiaceae.

**English names:** Bishop's weed, Ammi and Lovage.

**Common name:** Jawain, ajwain and ajowan.

**Locality:** Local area often cultivated occasionally.

**Flowers and Fruits:** February-March.

**Taxonomic Identification:** Plant is annual, branched, herb 15-30 cm high with fusiform roots; Stems erect 30-90 cm long; Leaves are 2-3 pinnate bracts, 2.5 cm long; Flowers white 1-2 mm long, in terminal compound umbel; Fruits ovoid and grayish brown in colour, 1-2 mm long.

**Medicinal uses:** Indigestion, stomach pain, diarrhoea, rheumatic pain.

**Part (s) used:** Fruits and seeds.

**Folk medicinal use:** Seeds are used to cure digestion. One tea spoon full of the seeds mixed with *Nigella* (mangrail) seed (one tea spoon full) and 5-6 clove fruits are boiled in water for half an hour. The left extract with very little quantity of salt is used regularly for a month in empty stomach to cure ingestion and chronic stomach pain. It is also used particularly in the control of diarrhea. The oil is applied to relieve rheumatic and neuralgic pain.

**9. *Chenopodium album* L.**

**Family:** Chenopodiaceae.

**English names:** Wild spinach and Lamb's Quarters.

**Common name:** Bathua sag and Cheel.

**Locality:** Abundant in rabi fields.

**Flowers and Fruits:** November-April.

**Taxonomic Identification:** Plant is annual, erect herb 10-40 cm high; Stem ribbed, green or purplish; Leaves simple, oblong, deltoid and lanceolate; Flowers in clusters in spikes, greenish-white; Fruits membranous utricle enclosed in the perianth; Seeds smooth, shiny and compressed.

**Medicinal uses:** Peptic ulcer, seminal weakness, cardiac disorders, general debility etc.

**Parts used:** Whole plant, seeds.

**Folk medicinal use:** This plant is very nutritious vegetables in reasonable quantities. It is used

as potherb to combat anemia.

**10. *Moringa oleifera* Lam.**

**Family:** Moringaceae

**English names:** Horse-radish tree and Drumstick tree.

**Common name:** Sahijan, sahjan, sajna and mungana.

**Locality:** Frequently cultivated near houses.

**Flowers and Fruits:** Flowers- January to March, Fruits-April to May.

**Taxonomic Identification:** Plant is perennial small tree 4-6 m tall with corky grey bark; Leaves tripinnate; Flowers whitish brown, arranged in 10-15 cm long in axillary panicles; Fruits pods up to 45 cm long, pendulous, greenish triangular, 9-ribbed; Seeds 5 mm in diameter, yellowish-white, 3-angled and winged.

**Medicinal uses:** Paralysis, dyspepsia.

**Parts used:** Roots, bark, leaves and fruits.

**Folk medicinal use:** Moringa has been used in [folk medicine](#), including [Ayurvedic](#) traditional medicine. Its leaves are given to nursing mothers as it is believed that it increases lactation.

**11. *Beta vulgaris* L.**

**Family:** Chenopodiaceae

**English name (s):** Beetroot and Garden beet.

**Common name:** Chukkander.

**Locality:** Local area of Gopalganj commonly cultivated in field.

**Taxonomic Identification:**

Plant is annual or biennial tuberous herb with condensed stem; Tuberous napiform taproot is fleshy and purplish in colour when fully grown; Leaves simple and rosette; Flowers 2-3 in a cluster or sometimes solitary on a long slender spike; Flowers and Fruits: October-March

**Medicinal uses:** Tumour, genital tumours, cancer, anemia, skin freshness, cuts and burns, inflammations, general debility, paralysis, liver and spleen disorders, cough, asthma etc.

**Parts used:** Tap roots, leaves and seeds.

**Folk medicinal use:** The decoction prepared from the seed is used for remedy for tumours of intestine and seed boiled in water can help in the treatment of genital tumours. The juice of other part of the plant is very much helpful in curing prostrate, spleen, stomach and uterous cancer. Beet juice is also an old folk medicine for anemia. Because of antioxidants in beetroot, applying the juice topically can give anti-aging effects. Antioxidants fight free radicals that cause wrinkles and fine lines. To use beetroot to prevent free mature aging have a medium size beetroot, peel it and slice into small pieces. Put the beetroot pieces in a blender and process until no chunks are left. Use a strainer to separate the pulp and the juice. Take the juice using a cotton ball and dab onto the face. Rinse after 10 minutes and use a mild face wash effect.



Fig. 1.

*Ageratum conyzoides* L



Fig. 2.

*Clerodendrum serratum* L. Moon



Fig. 3.

*Abutilon indicum* L. Sweet





Fig. 4.  
*Heliotropium indicum* L.

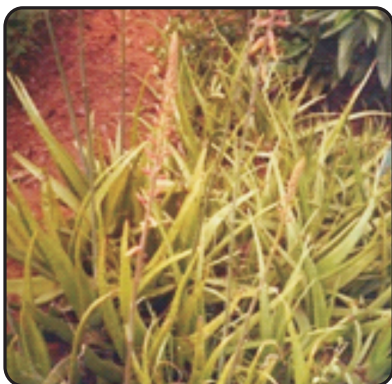


Fig. 5.  
*Aloe vera* (L) Burm.f.



Fig. 6.  
*Eclipta alba* (L) Hassk

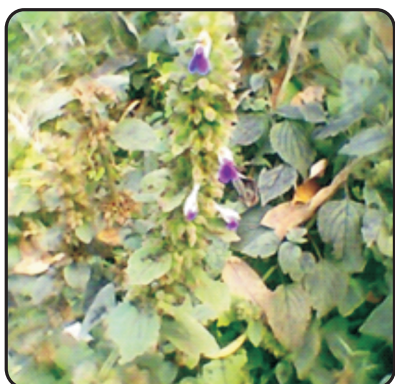


Fig. 7.  
*Leonurus artemisa* (Lour.) S.Y.H.



Fig. 8.  
*Carum copticum* Benth. & Hook.f



Fig. 9.  
*Chenopodium album* L.



Fig. 10.  
*Moringa oleifera* Lam.



Fig. 11.  
*Beta vulgaris* L

## SUMMARY AND CONCLUSION

The present work entitled “Documentation and Folklore use of Medicinal plants of Hathwa (Gopalganj), Bihar” is a result of one year extensive study. The vegetations of Hathwa have been selected

for the study of documentation and folklore use of medicinal plants to cure different diseases and assessed their status. The present work is a humble scientific endeavour dealing with taxonomic identification, distribution and medicinal uses of

some antibacterial, antiinflammatory, antiviral, antispasmodic, antidiabetic and antiallergic plants explored.

It has been observed and studied that the rural and local people of the study area are still strong belief of using medicinal plants and their drug preparations and same time these medicinal herbs are used to treat even the chronic disease. These medicinal plants are very much used in the folklores and different proverbs. The folklore on several medicinal plants and the formulation developed by using them is well recognized in different ethnic communities living in these areas. A number of medicinal plants are well described in these along with their medicinal properties. Validation of these folklores is needed for their sustainable utilization.

The present work concludes that to meet the increasing demand of medicinal plants by the pharmaceutical industries of Indian System of Medicine and Homeopathy, there is an urgent need to promote the cultivation and conservation of medicinal plants in different climatic conditions. Bihar is suffering from worst condition of retrogression however, it contains many medicinal plants in their vicinity and provides a better site for biosphere reserve, where medicinal plants may be conserved through judicious management as recommended above. There is also need of greater awareness amongst the local population as a whole, and particularly farmers about the medicinal and economic values of these plants so that this heritage may be wisely used and at the same time conserved and propagated for future generation.

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