



FOLKLORE MEDICINE PRACTICED BY TRADITIONAL HEALERS OF FRINGE VILLAGES OF GIBBON WILDLIFE SANCTUARY, ASSAM, INDIA

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ABSTRACT

Folklore medicine is the main key of modern drug discoveries. Forest fringe villages of Gibbon Wildlife Sanctuary are the place of folklore medicine culture since a long time. There are have different methodology for folk medicine preparation which still available among the indigenous people in certain locality. A total 48 medicinal plants were reported that have been used for preparation of folklore medicine. The present paper tries to focus on used of folklore medicine, their preparation and mode of application among the people of the fringe villages of Gibbon Wildlife Sanctuary.

INTRODUCTION

In culture and cultivation of medicinal plants, India is known since ancient time. The people of India used the medicinal plant in health care from old age. It is mentioned in Ayurveda, Sidda, Unnani books elaborately. In addition these are yet another widely spread tradition known as Folk-Healing, which is largely based on tradition and local mythology [1]. Medicinal and aromatic plants are local heritage with global importance. They play crucial role in our daily life. Medicinal plants have curative properties due to the presence of various chemical substances of different composition, which are found as secondary plant metabolites or part of these products. These medicinal and aromatic plants species have been used for treatment and preparation of folk medicines. North-east India is particularly rich in traditional practices of healing [2]. The north-east India fall within of the biodiversity hotspot- the eastern Himalayan region, and possess a varied topographic position that experiences

different climatic conditions [3]. It supports a large diversity of wild edible and medicinal plants [4, 5, 6]. Fringe villagers of most of protected areas are directly dependent on forest for basic needs like fuel, timber, medicinal and wild edible plants [7, 8]. Generally the people of poor section collect forest products for livelihood in day to day life [9]. Assam is a harbor of medicinal plants. About 747 medicinal plants reported from Assam of which 250 have been identified for pharmaceutical importance [10].

The Gibbon Wildlife sanctuary formerly known as *Hollongapar Reserve Forest* is an isolated protected area of semi evergreen forest in Assam. The forest has been fragmented and surrounded by tea gardens and small villages. The Gibbon Wildlife Sanctuary is famous for hollok gibbon. The forest is present with upper canopy dominated by the *hollong tree*, (*Depterocarpus macrocarpus*) middle canopy dominated by *Nahor* (*Mesua ferea*) and the lower canopy covered by shrubs and herbs. It supports large members of wild edible plants, medicinal plants and other NTFP yielding species. The present paper tries to document the traditional on medicinal plant of fringe villagers of Gibbon Wildlife sanctuary.

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Review Article



MATERIALS AND METHOD

The present study was carried out in and around Gibbon wild life Sanctuary (26.750 N, 94.220E). The people of the firing villages are farmer, wageworker and partially some are government service holder. Agriculture, livestock and daily wages are the main sources income. Forest resources especially non-timber forest products (NTFPs) play a little contribution in livelihood economy. The site experiences tropical semi evergreen forest. The annual rain fall is about 200 mm which supports high species richness.

Extensive field works were done for collection of information during March 2014 to May 2015. The used pattern of medicinal plants and preparation traditional medicine were documented by direct interaction with the villagers. Folk medicine practitioners namely Mr. Jayanta Madhab Bora and Mr. Jibeshwar Borpatrogohain were especially considered for their preparation. Medicinally used plant specimens were collected and preserved as herbarium for identification and further use. Plant specimens were identified with the help of expertise and literatures.

RESULT AND DISCUSSION

A total 48 medicinal plant species that were used by fringe villagers of Gibbon wild life Sanctuary in their day-to-day life to cure various ailments have been documented. These plants represented 34 families. Most of these plants were collected from the wild habitat. A few species such as *Acorus calamus*, *Emblia officinalis*, *Hibiscus rosa-sinensis*, *Mentha piperita*, *Moringa oleifera*, *Ocimum sanctum* were grown in the homegardens. Sometimes, a single species is used to cure more than one. Members of the family Zingiberaceae, Amaranthaceae, Asteraceae, papilionaceae, Clusaceae and Lamiaceae are used mostly. There were 5 medicinal plant species belonging to the family papilionaceae, while rests were represented by one or two species each. The use practice of these plants varied according to the nature of disease(s). In most of cases, the decoction of leaves, bark, rhizome, and root/tubers is consumed to cure disease(s). Descriptions of the medicinal plants with their uses are described below.

Scientific Name: *Acasia farnesiana* (L) Willd.

Common Name: Taruakadam.

Family: Mimosaceae.

Description of the plant: A spiny tall shrub, leaves are compound, 2.5-8 cm long, branching 2-8 pair, small. Flowers are small, more scented, fruits are legume type, 3-8 cm long slightly band.

Mode of use: The juice of the bark is used in repeal of head louse.

Scientific Name: *Adatoda vasica* Nees

Common Name : Titabahek

Family: Acanthaceae.

Description of the plant: It is a 2-3 m long plant,

evergreen, shrub plant, branches are quadrangular. Leaves are 15-35 cm long, 3-10 cm width, upper part of the leaves are dark green and lower part are pale, flowers are 30 cm long, inflorescence type is Panicle, corolla are light green or orange color, fruits are capsule type, 3 cm long. Mode of use: Plant paste allows to drink 10 ml twice daily for one week to treat seminal disorder and also used in treatment of cough and asthma.

Scientific Name: *Aegle marmelos* (L) Corr.

Common Name : Bel

Family: Rutaceae.

Description of the plant: It is a moderate size tree, thorns are present in the branches of stem, leaves are trifoliate, and laminas

are unequal flowers are small and white, the diameter of the fruits are 15 cm, round with hard coat.

Mode of use: The fruit is used in treatment of piles problem and liver problems. The ripen fruit are allow to eat and juice drinking at an regular interval.

Scientific Name: *Alocasia fornicate* Schott

Common Name : Bezkachu

Family: Araceae.

Description of the plant: The height of the plant is around 1 meter. Underground stem grow as vertically or longitudinally,

leaves are 15-30 cm long. Type of inflorescence is spadix, length of the petiole 20 cm. Generally found in damp and shady place.

Mode of use: The leaf paste is used in curing ring disease. Paste is applied on infected areas twice or thrice a day as per degree of infection.

Scientific Name: *Alpinia nigra* Burt.

Common Name : Tora

Family: Zinziberaceae

Description of the plant: It is long Rhizome bearing plant found in wet lands. It bears slight scent, perennial, aerial branch is 1.5-2 m long, fruits are round and when it ripe transforms into black color.

Mode of Use: Little amount of young leaf extract is used in liver problem and also leaf paste in skin diseases.

Scientific Name: *Alsotonia scholaris* (L) R.Br.

Common Name : Sotiyana

Family: Apocyanaceae

Description of the plant: A medium sized, buttressed evergreen tree. Bark is rough, grayish, white, yellow inside and exuding bitter latex when injured. Leaves 4-7 in a whorl, oblong or ovate oblong, obtuse, dark green above, pale and covered with brownish bloom beneath. Flowers during March –April.

Mode of Use: The leaf paste and latex gaining from stem is used in chronic dysentery.

Scientific Name: *Amaranthus spinosus* L

Common Name : Hatikhutura

Family: Amaranthaceae

Description of the plant: It is an annual herbaceous plant. Spines were present in the axial part of



the stem, leaves are 7.5 cm long.

Mode of Use: Two or three drops of plant sap were used in ear problem once daily.

Scientific Name: *Aristolochia saccata* L.

Common Name : Nilokontho

Family: Acanthaceae

Description of the plant: This is climber, terrestrial plant, leaves are rounded with light bluish colour.

Mode of Use: Leaf juice is used to drink for the treatment of tonsil.

1. Scientific Name: *Averrhoa crambola* L.

Common Name : Kordo

Family: Averrhoaceae

Description of the plant: It is a moderate size plant, evergreen, leaves are compound, and flowers are small, fruits are fleshy, 5-12 cm long, color of the flower is red, each fruits bear 6-8 seeds.

Mode of Use: Mature fruit is used to breakdown and treatment of stomach stone. Mature unripe fruits allow to eat.

2. Scientific Name: *Caesalpinia bonduc* (L) Roxb

Common Name : Letaguti

Family: Caesalpinaceae

Description of the plant: An extensive shrubby climber. Flowers yellow, seeds nearly globular to oblong ovate, occasionally ellipsoid, 1-2.5 cm in diameter, hard, smooth, shiny, slippery with numerous faint, color dull grey, highly bitter.

Mode of Use: Leaf paste is used in treatment of cough.

Scientific Name: *Cascabala thevetia* (L) Lippold.

Common Name : Korobi

Family: Apocyanaceae

Description of the plant: It is evergreen plant, small tree, latex are present in each branch and stem, leaves are 7-15cm long, 1-1.5 cm width, flowers are yellow color, scented and 5 cm long, fruits are round.

Mode of Use: The leaf paste is used as antivenom.

Scientific Name: *Cassia tora* L

Common Name : Medeluwa

Family: Caesalpinaceae.

Description of the plant: A moderate deciduous tree, 8-15 m in height with greenish grey smooth bark when young and rough when old. Flowers are bright yellow in pendulous racemes. Seeds biconcave, broadly ovate, light brown, horizontally immersed in dark colored sweetish pulp.

Mode of Use: The leaf paste is used for treatment of small pox. Paste is applied on the surface of infected areas.

Scientific Name: *Celosia cristata* L

Common Name : Kukurajoba

Family: Amaranthaceae

Description of the plant: It is a slightly long, smooth, ornamental herbaceous plant, leaves are simple, 10-15 cm long, light green.

Mode of Use: The leaf paste and soft stem are used for treating weaknesses. Patient are allow to eat twice daily.

Scientific Name: *Chenopodium album* L.

Common Name : Jilmil

Family: Chenopodiaceae

Description of the plant: It is a small annual herb with smooth stem.

Mode of Use: Whole plant is used in treatment of heart disease.

Scientific Name: *Chrysophyllum roxburgii*

Common Name : Bonpitha

Family: Sapotaceae

Description of the plant: A latex bearing tree, evergreen, leaves are 5-10 cm long, 2-5 cm width, leaves are dark green, flowers are small, clustered, type of fruit are berry, when ripe the fruits it transforms into yellow color, round.

Mode of Use: The plant fruit is used in treatment of diabetes.

Scientific Name: *Clerodendrum glandulosum* Colebr.ex Wall.

Common Name : Nefafu

Family: Verbenaceae.

Description of the plant: It is a shrub plant, this plant produces odd scent, leaves are 8-25 cm long, 3.5-22 cm width, white flower are found, type of inflorescence is cymos, fruits are round and it transforms into blue color when it ripe.

Mode of Use: The leaf paste juice is used in treatment of high blood pressure.

Scientific Name: *Clerodendrum infortunatum* L.

Common Name : Dhopattita

Family: Verbenaceae.

Description of the plant: It is a 1-2 meter long shrub, leaves are 12-25 cm long, 10-23 cm width, type of inflorescence is panicle.

Mode of Use: Leaf juice is used in treatment of diabetes

Scientific Name: *Clitoria ternatea* L

Common Name : Aporajita

Family: Papilionaceae

Description of the plant: It is a climber, leaves are compound, and color of the flower is blue or white. Fruits are 3-4 cm long and 1 cm width.

Mode of Use: The soft leaves and soft fruits are crushed and it is used in externally on the surface of mouth for mouth care.

Scientific Name: *Melothrea heterophylla*(Lour) Cogn

Common Name : kunduri/ Belipoka

Family: Cucurbitaceae

Description of the plant: Herbacious climber,

Mode of Use: The root extract are used to stop vomiting. Slight warm root extract is applied to cure ear ache. Applied two drops twice daily for 3-4 days.

Scientific Name: *Commelina bengalensis* L.

Common Name : Konahimalu

Family: Commelinaceae

Description of the plant: It is a herb, found in damp place,



leaves are small, the colour of the flower is blue and very small, flowering take place below the soil.

Mode of Use: The whole plant is used in treatment of Jaundice.

Scientific Name: *Cynodon dactylon* L

Common Name : Dubori

Family: Poaceae

Description of the plant: A Rhizome bearing perennial herb, approximately it grow up to 30 cm. leaves are 2-15 cm long, 2-3 mm width.

Mode of Use: The whole plant crushed and used drink to stop bleeding in excess menstruation bleeding.

Scientific Name: *Dhatura metel* L

Common Name : Dhatura

Family: Solanaceae

Description of the plant: A sub-glabrous spreading annual herb sometimes becoming shrubby may grow 2 m tall. Leaves are ovate lanceolate or broadly ovate, generally glandular in a long petiole of up to 10 cm in length. Flowers often double or triple and funnel shaped, 17.5 cm long and may be 12.5 cm in diameter across the mouth. Capsule is globule

Mode of Use: The paste of flower and leaf are used in treatment of stomach problem of cow and also used in treatment of pain.

Scientific Name: *Dillenia indica* L.

Common Name : Outenga

Family: Dilleniaceae.

Description of the plant: It is a half evergreen plant, height is 20 m, and flower color is white. Fruits are false they are modification of bract.

Mode of Use: Fruit juice is used for treatment of indigestion and kidney problem.

Scientific Name: *Dysoxylum binectariferum* (Roxb) Hook. F.

Common Name : Bandordima

Family: Meliaceae.

Description of the plant: It is a moderate deciduous plant, leaves are compound, 18.5 cm long, width is 3-9cm, flower color white and small, type of the fruit are capsule, 5-7 cm long.

Mode of Use: Protein is found in the fruits, the fruit is used in treatment of back pain and orthorities problem.

Scientific Name: *Flemingia strobilifera* (L) R. Br.

Common Name : Makhioti

Family: Papilionaceae

Description of the plant: It is a deciduous, shrub, leaves are 7.5-15 cm long and 2.5-7.5. Upper part of the lamina is dark green. Flowers are small, purple color.

Mode of Use: Crushed old seeds are used in treatment of skin diseases.

Scientific Name: *Jatropha curcas* L

Common Name : Bhotara

Family: Euphorbiaceae.

Description of the plant: It is a soft, latex producing, small deciduous shrub, leaves are 7.5-15 cm long, 7.5-12.5 cm

width, flowers are yellowish green , fruits are 2-2.5 cm long, oval or rectangular shaped.

Mode of Use: Fruit paste is used in treatment of pain, leaf abstract is used in treatment of cuttings and also eye problem.

Scientific Name: *Lasia spinosa* L Thw.

Common Name :Sengmora

Family: Araceae

Description of the plant: It is a herb, found in damp, water logging area, very soft, the stems are spiny.

Mode of Use: Fruit is used in treatment of goiter, treatment of piles, stomach disorders, rhizome is used in wounds, leaves are generally used in burn.

Scientific Name: *Lindernia crustacea* (L) F.Muell.

Common Name : Kasidoria

Family: Scrophulariaceae

Description of plant: It is a creeper plant, small herbaceous plant, leaves are small, and flower is white color.

Mode of Use: Juice of the plant is used in treatment of tonsil.

Scientific Name: *Lygodium flexuosum* (L) Sw

Common Name : Kopou dhekia

Family: Lygodiaceae

Description of the plant: Rhizomatous perennial fern with climbing rachis up to 2.5 mm thick. Pinnately arranged leaflets are present, the whole being 15-30 cm long, Basal leaflets often with large basal lobes, sometimes with two or three separate leaflets at the base.

Mode of Use: Leaf paste are used in stomachache, contripation, high blood pressure, stem is used in neck pain.

Scientific Name: *Mellustoma melabothricum* L

Common Name : Futukola

Family: Tiliaceae

Description of the plant: Shrub with 1-2 meter height, soft stems are quadriangulate, leaves and stems are hairy, leaves are 3-13 cm long and 2-5 cm width, flowers are dark pink, petals 5, androecium 10, type of fruit is capsule.

Mode of Use: The ripe fruits are eaten directly to increasing iron content in human body.

Scientific Name: *Mikania micrantha* L

Common Name : Premlota

Family: Asteraceae

Description of the plant: Climber plant, leaves are small, inflorescence are head or capitulum type, white clour flower are found in this plant.

Mode of Use: Leaf paste is used to treatment of pain, piles problem.

Scientific Name: *Mimosa pudica* L

Common Name : Nilazibon

Family: Mimosaceae

Description of the plant: A dwarf, deciduous, perennial small herb, spiciness are distributed in whole body in the plant. Leaves are compound, 3-8 cm long, sensitive, flowers are small, pink color, fruits are spiny.

Mode of Use: Whole plant extract is used to destroy



wounds.

Scientific Name: *Momordica cochinchinesis* Spreng

Common Name : Bhatkerela

Family: Cucurbitaceae.

Description of the plant: A annual plant germinates from underground perennial root tuber, leaves are semicircular, diameter is 10-15 cm, flowers unisexual, yellow-white color, fruits are 6-13 cm long, fleshy and spiny.

Mode of Use: The leaves and roots crushed and used to improve small pox. Fruits are used as vegetable.

Scientific Name: *Musa gigantean* Duthie

Common Name : Vimkol

Family: Musaceae

Description of the plant: Annual, height is approximately 5-7 cm, Leaves are 2-3 m long, 40-60 cm width, upper part of the leaves are dark green and lower part is light green, type of inflorescence is spadix ranges from 50-60 cm long. Fruits are 20-30 cm long.

Mode of Use: It is used in control of big boil, dysentery, cooling agent, stem is generally used in insect bite.

Scientific Name: *Musa paradisiaca* L

Common Name :Kaskol.

Family: Musaceae

Description of the plant: Annual, height is approximately 4-5 cm, Leaves are 4-5 m long, 40-60 cm width, upper part of the leaves are dark green and lower part is light green, type of inflorescence is spadix ranges from 1.8-2.0 cm long.

Mode of Use: Consumption of two numbers daily reduces high blood pressure.

Scientific Name: *Nyctanthes arbortristis* L:

Common Name : Sewali

Family: Oleaceae

Description of the plant: A deciduous big shrub. Branching and branches are quadriangulate, stems bears hair. Leaves are 7-14 cm long and 3-7.5 cm width, lamina is rough, diameter of the flower is 1-2 cm. color of flower is combination of white and yellow, well scented.

Mode of Use: Helps to cure the fever, flowers are used in measles, malaria, roots are used in liver ailments.

Scientific Name: *Oroxylum indicum* Vent.

Common Name : Bhatghila

Family: Bignoniaceae.

Description of the plant: A deciduous small tree, leaves are compound, length of leaves are about 2 m, Fruits are 30-60 cm long, 6-10 cm width, flat. Seeds are white, light, wings bearing.

Mode of Use: Leaf paste is used in treatment of pain

Scientific Name: *Oscimum basilicum* L

Common Name : Ramtulokhi

Family: Lamiaceae.

Description of the plant: Well scented, possess more branch, herbaceous, hairy stem bearing plant. Leaves are 1-3.5 cm long, 0.5-1 cm width, flowers are light purple color, and inflorescence is raceme.

Mode of Use: Leaf extract is used in treatment of cough

Scientific Name: *paedaria fotida* L.

Common Name : Bhedailota

Family: Rubiaceae

Description of the plant: It is a climber, leaves are 5013 cm long, 1.5-6cm long, flower color is purple, and inflorescence is cymose.

Mode of Use: Whole plant is used in increasing of hemoglobin and Iron.

Scientific Name: *Prunus persica* (L) Stokes.

Common Name : Norabogori

Family: Rosaceae.

Description of the plant: A small deciduous plant. Leaves are 5-10 cm long, color of the flower is pink. Fruits are fleshy, round, smooth. Each fruits always bears one seed.

Mode of Use: The plant is used in treatment of Cancer disease, Swelling of foot of cattle, leaves are used in Scabies.

Scientific Name: *Punica granatum* L

Common Name : Dalim

Family: Puniaceae.

Description of the plant: A big shrub plant. Deciduous plant. Leaves are 2-6.5 cm long, rectangular, there are found two number of thorn in base of each leaves. Color of the flowers is dark red, small. Fruits are round, seed found numerous no in the fruits with fleshy.

Mode of Use: Leaf paste is used in to stop loose motion and seed juice is used in treatment of sinus problem, flower are used in stop nose bleeding.

Scientific Name: *Rhynchosyilis retusa* (L) Bl

Common Name : Kopou

Family: Orchidaceae

Description of the plant: It is a epiphyte plant found in numerously in North-eastern region of India, Generally found three types of roots in orchids climbing, clinging and absorbing root respectively. Generally it is known as "orchid". Type of the inflorescence is raceme. Color may be radish or dark pink, well scented.

Mode of Use: The leaves paste is used in treatment of ear problem.

Scientific Name: *Rubus alceifolius* Poir.

Common Name : Jutulipoka

Family: Rosaceae

Description of the plant: the plant is a shrub plant in sometimes it produces climber, stem bears thorn and dwarf, leaves are 5-20 cm long along with same width, 3-7 lobed are found in the leaves. Flowers white color, diameter are 1-2.5 cm, fruits are dark red and fleshy.

Mode of Use: The roots are used in piles problems, leave paste is generally used in Typhoid.

Scientific Name: *Sapindus mukorossii* Gaertn.

Common Name : Monisal

Family: Sapindaceae.

Description of the plant: It is a deciduous tree, usually with 5-10 pairs of leaves, solitary with large drupes. This plant is belongs to the main plant order Sapindeae and



family Sapindaceae. The trunk is strait and cylindrical, the tree can reach a height of 25m. The fruits appear in July-August and ripens by November-December these are solitary globose, round nuts 2-2.5 cm diameter, fleshy, saponaceous and yellowish brown in colour.

Mode of Use: Bark of the seeds are used in treatment of thyroid problems, seed cover is used in dandruff, antipruritic, fever, fruits are used in lung disorders.

Scientific Name: *Scopularia dulcis* L
Common Name : Chenibon

Family: Scropulariaceae

Description of the plant: It is a herb, branching, leaves are soft and small, flowers are small, yellow colour, the fruits are sugary to eat.

Mode of Use: The leaf and seeds are used to make paste and this paste is used in jaundice.

Scientific Name: *Sesbania grandiflora* (L) Pers.

Common Name : Bokful

Family: Fabaceae.

Description of the plant: Small tree, leaves are compound, leaves are 3 cm long and 1 cm width, the flower size is big, white colored.

Mode of Use: The flower is mixed with cow dung and used to treatment epilepsy.

Scientific Name: *Spilanthes paniculata* Wall.ex DC.

Common Name : Bhingaraj

Family: Asteraceae.

Description of the plant: It is a herbaceous plant basically found in damp shady places, leaves are triangular, 1-5.5 cm long, 0.5-3 cm width, flowers are yellow.

Mode of Use: This plant is used in treatment of cancer, high blood pressure, leaves are used in jaundice.

Scientific Name: *Tinospora sinensis* (Lour) Merr.

Common Name : Sagunilota

Family: Menispermaceae

Description of the plant: It is climber. Stems are green, smooth, there are found small trichome in the stems, leaves are 7-12 cm long with same width, flowers are green.

Mode of Use: It is used in Allergy, root and bark are used in gonorrhea, diabetes, stems are used in urinary problems.

DISCUSSION AND CONCLUSION

The ever-increasing global interest in the use of medicinal plants has resulted in innumerable studies in the past decade. North east India is one of the wealthy regions of India that is not only for its rich biodiversity but also rich in cultural diversity and ethnicity. Varied ethnicity supports rich traditional knowledge system [11]. The local people of the state have rich knowledge on the use of folk medicinal plants [12-14]. But mostly the plants were collected from natural habit that can lead to decreasing the local population of selective species [15]. Nevertheless the knowledge on medicinal plants does not get inherited due to unscientific belief. Therefore in order to prevent erosion of traditional knowledge, particularly on medicinal plant utilization, the indigenous knowledge system should be documented properly through scientific approach [16]. The deliberate cultivation of different medicinal plants in abandoned agricultural lands depending on their altitudinal sustainability, mixed cultivation system, cultivation in manmade gardens, preservation in botanical gardens of different educational institutions and government sector can be the substitute ways for conservation and sustainable utilization of medicinal plants of this region.

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CONFLICT OF INTEREST:

The authors declare that they have no conflict of interest.

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