

INVESTIGATION ON ENDANGERED NUTRITIONAL MEDICINAL VALUE PLANTS OF BHANDARA DISTRICT AND THEIR CONSERVATION.

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Abstract

The present report has been conducted in Bhandara District ,of Maharashtra . Bhandara is well known for its natural diverse Flora and Fauna .Bhandara covered the area about 3,717 square kilometre .The natural vegetation of this District includes the most of the plant species of medicinal and nutritional importance, which were regularly being used by the tribal peoples to cure various diseases and for nutritional objectives .The paper includes important nutritional medicinal plants, which is under endangered and threatened categories.

Key Words- Flora , Nutritional ,Medicinal ,Endangered ,Threatened.

Introduction

In the present study, we choose some plants currently used in the folk medicine in our region, small rural place in Bhandara, a rich fauna and a good source of medicinal plants. Bhandara , the district of lakes and also called as the ‘rice bowl of Maharashtra’ is situated in the Nagpur division (21.09 N latitude and 79.42 E longitude). It is surrounded by Balaghat district (Madhya Pradesh) in the North, Gondia in the East, Chandrapur in the South, and Nagpur in the West. The area is flat or undulating, broken by the isolated hillocks and ranges of low hills. The district is covered by Ambagad hills, Ballahi range and Pauni ranges. The forest is tropical dry deciduous type and consists of sub-types, teak forest and mixed forests. Gond people are quite aware of the uses of plant species having ethno botanical values .In the past few decades there has been an ever increasing global inclination towards herbal medicine, followed by a belated growth in International awareness about the dwindling supply of worlds medicinal plants (Bodekar 2002).The plants used in the Phyto pharmaceutical preparations are obtained mainly from the natural growing areas .The genetic diversity of medicinal plants pharmaceutical preparations are obtained mainly from the naturally growing areas .The genetic diversity of medicinal plants in the world is getting endangered at alarming rate because of ruinous harvesting practices and overharvesting for production of medicines, with little or no regard to the future .Also, extensive destruction of the plant rich habitat as a result of forest degradation ,agricultural encroachment ,urbanization etc. Is other factor ,thus challenging their existence (Gupta et al.1998).In view of the tremendously growing world population ,increasing anthropogenic activities rapidly eroding natural ecosystem , etc. The natural habitat for a great number of herbs and trees are dwindling and

of per capita consumption has resulted in unsustainable exploitation of earth’s biological diversity exacerbated by climate change ,Ocean acidification , and other anthropogenic environmental impact (Rands et.al. 2010).The nutritionally rich medicinal plants and their value added product will overcome the weakness , malnutrition ,underweight and nutritional disorders in all age groups of person. The Seven threatened nutritionally rich medicinal plants and their conservation are given below

Materials and Method

A Survey of the area was conducted during 2021-22. The ethno botanical information was gathered from the various tribal communities of the Bhandara district. The valuable information was also collected from the tribal communities. The plant specimen is collected and preserved in the form of a herbarium. The herbarium specimens are deposited in the Botany Department, J.M.Patel Arts, Commerce and Science College, Bhandara. The identification and authentication were made with the help of flora and Subject experts.

Result-

This need not only to conserve threatened nutritional value medicinal plants but also used to be protected in terms to provide a sustainable source. The seven threatened plants studied were discussed in detail

1.*Rauvolfia Serpentina* (L.)

Common name- Sarpgandh

Family-Apocynaceae

Sarpagandha are glabrous undershrub's, un-branched or with few branches, up to 1 m. high. Leaves are whorled, 3 at each node, simple, elliptic lanceolate, acuminate, entire; up to 17 cm. long and 5.5 cm. broad, dark green and shining above, pale beneath; petiole up to 1 cm. long. Inflorescence a terminal umbelliform cyme, often appearing as lateral due to the growth of the shoot. Flowers hermaphrodite, actinomorphic, short pedicelled, bracteate. Calyx 5-fid, bright scarlet; segments 2 mm. long. Corolla salver-shaped, densely hairy inside, pink or rose; tube slender, slightly dilated at the middle, 1-1.5 cm. long; lobes 5; elliptic oblong, 3-4 mm. long, imbricate, stamens 5, inserted at the swollen portion of the corolla tube, included. Disc cup shaped, membranous; obscurely lobed. Carpels 2, connate; ovules 2 in each carpel, style filiform, stigma broad, calyptriform at base and 2-fid at the tip. Fruit a single drupe or didymous and connate, about 5 mm. in diam, purplish black when ripe.

Medicinal Uses of Sarpagandha: The root is purgative, anthelmintic, a sedative and hypotensive and is an antidote for snake and insect-bite; now mostly used in hypertension. The root contains many alkaloids the most important of which is reserpine which is a specific remedy in hypertension and certain neuro psychiatric disorders.

2 Cissus quadrangularis

Common name- Hadjod

Family- Vitaceae

Cissus quadrangularis belongs to the family *Vitaceae*. The *Cissus quadrangularis* tree grows up to a height of 1.5 m, with branches splitting into four parts or a quadrangular arrangement. The leaves are bright green, with sharp edges and three lobes. This plant bears white or jade flowers and red berries when ripened. All parts of *Cissus quadrangularis* are edible, with the stem and leaves being used traditionally for cooking and therapeutic purposes.

Medicinal uses of Cissus quadrangularis

Cissus quadrangularis portrays powerful traits in mending fractures of the bones as well as being an excellent natural remedy for flatulence, indigestion, weight loss, epilepsy and haemorrhoids

3. Terminalia arjuna

Common name-Arjuna

Family-Combretaceae

Terminalia arjuna, commonly Known as *Arjuna* belongs to the family of *Combretaceae*. *Arjuna* tree is about 60-80 ft in height, leaves are sub-opposite coriaceous, oblong/elliptic, dull green from the upper side and pale brown on the lower side, often unequal sided with 10-15 pairs of nerves. The tree bears white sessile bisexual flowers in short axillary spikes or in a terminal panicle arrangement. Fruits of *Terminalia arjuna* are drupe, ovoid, fibrous-woody and smooth skinned with five hard wings or angles which are oblique and curved upwards. Stem bark is simple, smooth and pinkish grey in colour in external view. An internal view, the bark is soft and reddish in colour

Medicinal uses of Terminalia arjuna

The bark has been described as an astringent, demulcent, expectorant, cardio tonic, styptic, antidiarrhetic, urinary astringent, and has shown to be useful in fracture, ulcers, leukorrhoea, diabetes, anemia, cardiopathy, and cirrhosis. Decoction of the bark has been used as ulcer wash, while bark ashes have been prescribed for snakebite and scorpion sting. Fresh leaf juice is used for the treatment of ear ache

4. Tinospora cordifolia

Common name- Gulvel (Giloy)

Family : Menispermaceae

Tinospora cordifolia is a large, deciduous, extensively spreading and climbing shrub with several elongated twining branches. The dried aerial roots are light grey-brown or creamy white in colour, which arises from the mature branches. Stem of this plant is rather succulent with long, filiform, fleshy and climbing in nature. Leaves of this plant are membranous, simple, alternate, with long petiole approximately 15 cm which is round, pulvinate, heart shaped, twisted partially and half way round. Leaves are seen in bulk intensely green in colour but over mature leaves are yellowish green to yellow colour. Leaves are bitter and have an indistinct odour. Lamina is ovate cordate, 10-20 cm long, 8-15 cm broad. Flowers are small and unisexual which are greenish yellow in colour. Male flowers are clustered and female flowers exist in solitary. Fruits are fleshy and single seeded which are aggregates of one to three. These are drupelets on thick stalk with a sub terminal style scars. The shape of the fruit is ovoid with smooth texture and Scarlet or orange red in colour.

Medicinal Uses of *Tinospora cordifolia*

Tinospora cordifolia is useful in the treatment of helminthiasis, heart diseases, leprosy rheumatoid arthritis, support the immune system, the body's resistance to infections, supports standard white blood cell structure, function and levels. It also helps in digestive ailments such as hyper acidity, colitis, worm infestations, loss of appetite, abdominal pain, excessive thirst and vomiting, and even liver disorders like hepatitis.

5. *Sterculia urens* Roxb

Common name- Gullar

Family- Malvaceae

Sterculia urens Roxb is from the family *Malvaceae*, Commonly called "karaya". It is recognized as gum karaya tree' for the globally significant gum, known as 'Indian Tragacanth, found chiefly in India. Deciduous trees, to 15m high, bark 10-12mm, white or greenish-grey, smooth, exfoliating in large, thin papery flakes; blaze red; exudation yellowish-white, sticky; branches horizontal; branchlets pubescent. Leaves simple, palmately 3-5 lobed, alternate clustered at the tips of branchlets; stipules free, lateral, caudaceous petiole 8-18 cm long, stout, pubescent; lamina 15-30x 18-30cm, orbicular, base cordate or sagittate, lobe apex acuminate or caudate acuminate, margin entire, glabrous above, velvety pubescent beneath, coriaceous; 3-5 ribbed from base, palmate, prominent, lateral nerves 5-7 pairs, pinnate, prominent intercostae subscalariform, faint. Flowers polygamous, greenish yellow, in axillary panicles, covered with sticky tomentose of glandular, stellate hairs.

Medicinal uses of *sterculia urens* Roxb

It is best used as laxatives. Its characteristic makes this very popular product. It forms a mucilaginous gel when it gets in contact with water. Our body does not digest and absorb Gum Karaya Granules. It swells in the intestine, makes it dilate, and works as laxative. Adhesive for dental implants. Gum karaya has some antibacterial and anti-inflammatory characteristics by which it is an effective remedy in sore throat. It also maintains normal blood sugars. Many anti-diabetic medicines contain Gum karaya.

6. *Acacia Catechu*

Common name- Khair –Kattha

Family -Fabaceae

Acacia catechu is a small or medium-sized, thorny tree up to 15 m tall; bark dark grey or greyish-brown. It is commonly known as catechu, kattha and black cutch. Leaves bipinnately compound with 9-30 pairs of pinnae, glabrous or pubescent. Flowers in 5-10 cm long axillary spikes, pentamerous, white to pale yellow in colour. Fruit a strap-shaped flat, tapering at both ends, shining brown, dehiscent, 3-10-seeded.

Medicinal uses of *Acacia catechu* It is used for medicinal purposes, especially for the treatment of cough, asthma, bronchitis and sore throat. The gummy extract of the wood called black catechu, is used as an anodyne, astringent and bactericide. The heartwood extract is also used in, colic, diarrhea, boils, skin afflictions. The bark shows anti-helminthic, antipyretic and anti-inflammatory properties. It is also used in the treatment of ulcers, anaemia and gum troubles

7. *Aegle marmelos*

Common name- Bael

Family -Rutaceae

Aegle marmelos is a slow-growing, medium sized tree, up to 12-15 m tall with short trunk. Its bark is thick, soft, flaking and spreading. The leaves are deciduous, alternate, borne singly or in 2's or 3's oval, pointed, shallowly toothed leaflets, 4-10 cm long, 2-5 cm wide and the terminal one with a long petiole. Flowers are fragrant having sweet aroma and blooms in clusters of 4 to 7 along the young branchlets. Each flower has 4 curved fleshy petals which are green outside and yellowish inside, and 50 or more greenish-yellow stamens. Shapes of the fruits can vary with varieties and can have round, pyriform, oval, or oblong shapes having 5-20 cm diameter. Fruit may have a thin, hard, woody or soft rind. It is dotted with minute oil glands which are aromatic. Inside the fruit, there is a hard central core and 8 to 20 faintly defined triangular segments, with thin, dark orange walls. Seeds are flattened-oblong, about 1 cm long, bearing woolly hairs.

Medicinal uses of *Aegle marmelos*

Aegle marmelos (L.) Corr.) is an important medicinal plant which has an enormous traditional value against various diseases. The different parts *Aegle marmelos* are used for various therapeutic purposes, such as for treatment of Asthma, Anemia, Fractures, Healing of Wounds, Swollen Joints, High Blood Pressure, Jaundice, Diarrhoea Healthy Mind and Brain. *Aegle marmelos* has been used as a herbal

medicine for the management of diabetes. The unripe dried fruit is an astringent, digestive, stomachic and used to cure diarrhoea and dysentery. The leaves are made into a poultice and used in the treatment of ophthalmic. The roots and the bark of the tree are used in the treatment of fever by making a decoction of them.

Conclusion

The normal health care practice is typically structured on medicinal vegetation gathered from the wild. In spite of this, the Medicinal and Nutritional plant biodiversity is being depleted due to man-made and natural calamities. Moreover, the indigenous information related with the conservation and use of medicinal flora is also disappearing at an alarming rate. The purpose of conservation is to aid sustainable improvement through defending and the usage of biological sources in ways that do not scale down the world's range of genes and species or damage important habitats and ecosystems. In general, it entails things to do such as collection, propagation, characterization, evaluation, disease indexing and elimination, storage and distribution. The overall conclusion of the find out about is to initiate and aid for conservation, management and sustainable utilization of medicinal and nutritional vegetation for human and livestock fitness care and to promote in-situ conservation, ex-situ conservation and sustainable makes use of medicinal plants life in and around site of global significance.

References

1. Bodeker, G. (2002). Medicinal plants: towards sustainability and security. http://source.bellandnet.org/medplant/docs/ssong/MEDPLANT_Discussion_Paper1.Doc
2. Chopra, R.N. (1932). The Indigenous Drugs of India. Calcutta.
3. Cooke, T. The Flora of the Presidency of Bombay, I-II, London, 1901-1908
4. Ramteke, D.D., Zade, S.B. & Khune, C.J. (2007). Conservation practices and utilization Strategies of Medicinal plants in Bhandara district of Vidarbha region M.S. India. Environment conservation Journal, 8 (3)63-65 (ISSN 0972-3099)
5. Gupta, R. (1998). Genetic Resources of medicinal plants. Indian Journal Plant Genetic Resources, 1.98 :102
6. <https://www.researchgate.net/publication/291274163>
7. <https://www.researchgate.net/publication/280009975>
8. Jain, S. K., (1991). Dictionary of Indian Folk Medicine and Ethnobotany. Deep publications, New Delhi.
9. Patil, K. J., Patil, S.V., (2012). Biodiversity of Vulnerable and endangered plants from Jalgaon district of North Maharashtra. Asian Journal of pharmacy and Life science, ISSN 2231-4423 vol.2 (2)
10. Sunil, M.A., Sunita, Y.S., Radhakrishnan, E. K. & Jyothis, M. (2019). Journal of Ayurveda and Integrative Medicine, Vol 10 Issue 3, Pg 185-191
11. Gupta, R., Vairale, M.G., Chaudhari, P.R. & Wate, S.R. (2009). Ethnomedicinal Plants used by Gond Tribe of Bhandara District Maharashtra in the Treatment of Diarrhoea and Dysentery, Ethnobotanical Leaflets 13: 900-09.
12. Rands, M.R.W., Adams, W.M., & Bennun, L. (2010). Biodiversity conservation: challenges beyond, *Sci.*, **329**:1298-03.
13. Kadam, S. T. & Pawar, A. D. (2020). Conservation of Medicinal Plants: A Review, International Ayurvedic Medical Journal, ISSN 2320 5091 Pg 3890-3895
14. Sharma, S. & Thokchom, R. (2014). A review on endangered medicinal plants of India and their conservation. Journal of Crop and Weed, 10(2):205-218
15. Venkata, N. K. & Karumuri, S. S. (2011). Conservation of Medicinal Plants (Past, Present & Future Trends). et al / J. Pharm. Sci. & Res. Vol.3(8), 1378-1386