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Ethno-medicinal uses of *Nyctanthes arbor-tristis* L. in Bargarh district, Odisha

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Abstract

Bargarh is one among 30 districts and is situated in the western part of Odisha. Diverse climate and habitat of Bargarh district provide favourable condition for existence of variety of plant species. The tribals and rural people living in the hilly regions and remote areas of the district use various plants to cure for various diseases and ailments. Indiscriminate use of some plants of ethnomedicinal importance has resulted in gradual extinction of them. Proper awareness regarding the use of these medicinal plants among the tribals and other rural population is, therefore, necessary. The present paper deals with such an important medicinal plant species of ethnomedicinal importance, *Nyctanthes arbor-tristis* L. of family oleaceae. Its plant parts such as roots, leaves and flowers are used in traditional medicine. Local inhabitant of this region use its different parts to cure different diseases and ailments such as asthma, malarial fever, intermittent fever, constipation, stomach disorder, spleen enlargement, bed sores, sciatica, anthelmintic, killing lice and removing dandruff.

Keywords: Ethnomedicine, *Nyctanthes arbor-tristis*, Bargarh district, Odisha

1. Introduction

India is one of the richest floristic regions of the world and has been a source of plants and their products since ancient time. It is evident that herbs are used by the ethnic community for various purposes including medicine. The ethnic mass utilized herbal plants for cure of some common diseases like cold, fever, dysentery, diarrhoea, joint pain etc. A good number of medicinal plants are also available in their vicinity and that is why it is easier for them to collect herbs for their primary healthcare. Besides, due to cost effectiveness, the rural population does not have sufficient access for modern medicine, which compelled them to depend upon herbal medicines.

Nyctanthes arbor-tristis is a most useful flowering plant in the family oleaceae. It is native to South Asia and in India it is found in Himalayan region, West Jammu and Kashmir, West Bengal and Odisha. It is called as the Tree of Sorrow (because the flowers start falling after midnight and by the day break, the plant appears dull). The plant is popularly known as Night Jasmine or Coral Jasmine in English, in Odia is called as *Sefali*, *Jhar sefali*, *Ganga-siuli*, in Bengali it is called as *Sefali*, *Siuli*. The plant is also called 'Parijata', a popular name according to Hindu mythology. The plant is locally recognised under different names in Bargarh district like *Ganga-siuli* and *Kharkhas*.

1.1 Botanical description

It is a large shrub or a small tree of about 10 m height, with grey bark. The leaf is simple, rough, opposite, 6-12 cm long and 2-6.5 cm broad with entire margin and acute apex. The flower is white, fragrant, with a 5-8 lobes white petals with orange-red centre. Fruit is flattened, bilobed, almost rounded capsule with 2-seeded. Flowering occurs during July to October.

2. Materials and Methods

Extensive field study of the area was carried out during the period of July 2015 to December 2017. The field survey was conducted with the help of some traditional healers of the locality. Some selected local experienced old persons and herbal medicine practitioners such as *Kabirajs* and *Vaidyas* were interviewed regarding the ethnomedicinal uses of plants. Repeated queries were made in different villages to confirm the authenticity of the information gathered on ethnomedicinal uses of the plants. The collected plant species were verified and identified by consulting standard regional floras [1, 2]. The latest botanical nomenclature has been checked with widely accepted website [3]. Out of these collected plant species one important plant, *Nyctanthes arbor-tristis* L. of family oleaceae has been noticed with multifarious

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ethnomedicinal uses. The ethnomedicinal data recorded from tribals and rural people has been compared with some available scientific literatures [4, 11]. Voucher specimens are deposited in the Herbarium, Department of Botany, Panchayat College, Bargarh.

3. Result and Discussion

3.1 Medicinal uses and pharmacological activities

Herbal medicinal system provides a promising platform to other system of medicines. Herbs have always been the principles form of medicine since age old traditions in India and now a days it has become very popular throughout the world.

Medicinal plants are being widely used either as single drug or in combination for health care system. *Nyctanthes arbor-tristis* commonly known as Night Jasmine or Harshringar is an important medicinal plant mainly used in Ayurveda. Some earlier literatures revealed that different plant parts are used to cure diseases like piles, removing dandruff and killing lice, dry cough, sciatica, arthritis, skin problem, asthma, Intestinal worm, cholagogue, laxative, chronic fever, malaria, blood dysentery, gout and spleen enlargement [4, 5, 12, 13, 14].

Plant parts such as leaf, fruit and seeds have been reported to be containing various phyto-constituents belonging to the categories of glycosides, saponins, phenolics, phytosterols, flavonoides and tannins [15]. Several studies are being carried towards its activities like antibacterial, antifungal, immune-modulator, antipyretic, antioxidant and hepato-protective properties. Earlier studies on pharmacological aspect have revealed that the plant parts are used variously such as in antibacterial [16], anti-viral [17], anti-pyretic [14], anti-malarial [13], anti-oxidant [18], anti-inflammatory [18], anti-arthritis [24], anti-cancer [15], anti-diabetic [25], CNS depressant [6], hepato-protectivity [12], antispasmodic and antihelmintic [7] and many more activities.

3.2 Ethnomedicinal use of *Nyctanthes* (Kharkhas) as reported from the study area

Asthma- Leaf (5-6 numbers) and one leaf of *Piper betle* are crushed together and taken thrice daily to release cough and cure asthma.

Bed sores- Leaf paste is applied twice daily over the affected part regularly.

Spleen enlargement- Leaf of the plant, leaf of *Hygrophila auriculata* and *Achyranthes aspera* are crushed together and taken with cow's milk 2-3 times daily.

Intermittent fever- Leaf (5-6 numbers) extract and rhizome of *Zingiber officinale* extract are mixed together and taken 3 times daily for 7 days.

Leaf extract (2 teaspoon) of the plant, rhizome extract of *Zingiber officinale* and honey are mixed together and is taken 2 times daily for 7 days.

Anthelmintic- Leaf extract along with lime water is taken once daily in empty stomach.

Sciatica- Leaf (10 numbers) paste is taken with a glass of lukewarm water and is taken 2-3 times daily.

Constipation and Stomach disorder- Seed paste is taken with water 2 times daily.

Dandruff and lice- Seed paste is applied over the affected part.

4. Conclusion

Nyctanthes arbor-tristis is an important medicinal plant with multifarious use and also it is an ornamental plant. Although plant parts like leaf, bark, flower and seed are used to cure

various diseases, but its leaf is used profusely in scientific study. It is a plant whose flowers are offered to the deities. Due to its high therapeutic value now a day it is a matter of interest for research in bio-molecule science to explore more accurate therapeutic index, in terms of active principles that could be the maker compound of the plant [26]. During study it has been observed that the leaves are mostly used in comparison to other plant parts. One interesting use and new finding in this paper has been observed that the leaf paste is used against bed-sore. Above and all *Nyctanthes* (*Kharkhas*) is an important herbal medicinal plant; besides leaves other plant parts are also important and there is a need to pay attention on the flowers and stem also.

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