



ETHNOBOTANICAL RESEARCH ON CERTAIN THERAPEUTIC PLANTS FOUND ON GAYA'S BRAHMYONI HILL.

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Abstract:- Documenting traditional medicinal plant species is crucial in Bihar for biodiversity conservation, bioactive chemical extraction, and the preservation of indigenous knowledge. Native populations in Bihar have used a wide array of traditional medicinal plants to treat a variety of human and cattle diseases. The goal of this study was to collect and identify plants used by indigenous peoples for therapeutic purposes, as well as to document information on traditional herbal medicine. Plant samples were collected from Gaya's Brahmayoni hill. Ethnobotanical research of three therapeutic plants from Gaya's Brahmayoni hill, namely *Pithecellobium dulce*, *Ziziphus jujuba*, and *Gymnema sylvestris*, is now underway. The ethnomedicinal herbs that have been described are commonly used for anaemia, eye irritation, antimicrobials, diabetes, arthritis, and other conditions. As a result, proper recording and identification of plant species used, as well as herbal preparation, are necessary to preserve traditional treatment expertise. To avoid extinction, it is recommended that local populations participate in the cultivation of the most regularly used medicinal herbs.

Keyword :- Ethnobotany, *Pithecellobium dulce*, *Ziziphus jujuba*, *Gymnema Sylvestris*.

INTRODUCTION

J. W. Hershberger invented the term 'Ethnobotany' in 1895 to describe plants used by aborigines. It is concerned with the research and evaluation of plant-human relations at all stages, as well as the impact of the plant environment on human civilization [1]. Plants have always been used by humans for a variety of purposes, including food, medicine, building materials, textiles, cosmetics, and religious ceremonies, and this knowledge has been passed down from generation to generation. Plants were the first and most widely utilised type of medicine, and they still play an important role in drug development [2].

The current project is an ethnobotanical investigation of three medicinal plants found on Gaya's Brahmayoni hill: *Pithecellobium dulce*, *Ziziphus jujuba*, and *Gymnema Sylvestris*. *Pithecellobium dulce* (Benth) is a small to medium-sized evergreen, spiky legume tree of the Leguminosae family. The leaves are bipinnate with two pairs of leaflets, and the fruits turn scarlet as they develop and are exceptionally sweet in taste, earning it the name 'jungli jalebi'. The pods are reddish-brown in colour. Each pod contains between 5 and 10 glossy black seeds. The tightly coiled seed pods are the key distinguishing feature of this tree, making it easy to identify. The bark gets grey, tough, and eventually peels [3].

Gymnema sylvestris, often known as Gurmar, is widely used for its anti-diabetic properties. *G. sylvestris* is a perennial woody climber in the milkweed family Asclepiadaceae. The leaves are opposite and elliptic or ovate in shape. The inflorescence is a lateral umbel in cymes. The corolla is pale yellow in hue, with two carpels and one unilocular ovule locule [4]. In India, it is utilised as folk medicine for a variety of illnesses such as inflammation, eye problems, asthma, dental caries, and diabetes. This plant recently came to light as the source of the medicine BGR-34, which was developed by the Council for Scientific and Industrial Research (CSIR) and is marketed by Aimil Pharmaceuticals Pvt. Ltd. as an anti-diabetic Ayurvedic formulation [5].

Ziziphus jujuba Mill, often known as Ber, is a plant in the Rhamnaceae family. Ber has been recognised as a useful edible fruit in India since the mythology of Ram and Shabari, as recounted in the Ramayana. The bark is greyish brown in tone and contains deep longitudinal furrows. Stipules are primarily spines and the leaves are petiolate. Cymes or tiny axillary clusters of flowers are produced. The fruit is an oval edible drupe, the flesh is acidic and pleasant, and the fruit is greenish, yellow, or occasionally reddish [6]. This genus is important in traditional medicine for treating a variety of ailments, including antipyretic, analgesic, antibacterial, antifungal, and anti-inflammatory properties [7]. Keeping all of the foregoing facts in mind, the current job has been undertaken.

MATERIALS AND PROCEDURES :-

Three medicinal plants, *P. dulce*, *G. sylvestre*, and *Z. jujuba*, were obtained from Gaya's Brahmayoni hill. DR Vinay Shankar, Department of Botany, Gaya college, Gaya, chose, identified, and certified the plants. During the collection of ethno medicinal plant information, extra care was taken to record information from local vaidyas, Ojhas, and traditional herbal healers.

RESULT :-

Gurmar (*G. sylvestre*):

This medicinal herb has played a key part in the Indian traditional system of folk medicine. *G. sylvestre* herbal preparations are being employed in type 2 diabetes, asthma, obesity, and arthritis, in addition to osteoporosis, constipation, and anti-inflammatory properties.

Jungli jalebi (*P. dulce*):

A decoction of the leaves is used to treat digestive problems, earaches, and toothaches. Indigestion and ulcers are treated with pods. The plant's bark can be used to treat dermatitis and eye discomfort. Seed oil possesses anti-oedema and spermicidal effects. Swellings are treated using a decoction of the fruit peel.

Ber (*Z. jujuba*):

Gaya region traditional healers patch wounds with dried leaves and powdered bark. Externally, the aqueous paste of the leaves is applied to relieve a burning sensation. Roots are used to treat diarrhoea; they are mixed with cow's milk and fed to the sufferer till they are cured. The leaves have antipyretic properties and help to prevent obesity.

Table 1: Past Ethnomedicinal work on *G. Sylvestre* (GS)

Plant part used	Folklore claim
Leaves	<ul style="list-style-type: none"> ➤ Leaf powder is used for gastric trouble and in Diabetes; leaf juice is given as eye drops [8]. ➤ Leaves of GS are crushed with pepper, garlic and a pinch of common salt to treat ephemeral fever in animals [9]. ➤ Paste of fresh leaf is applied on eyelid twice daily to treat cataract [10].

Table 2: Past Ethnomedicinal work on *P. dulce*

Plant part used	Folklore claim
Leaves	<ul style="list-style-type: none"> ➤ The aqueous extract of leaves has been seen showing remarkable antidiabetic activity in rats [3]. ➤ Leaves can be used as an emollient and astringent [3] ➤ The leaves can be applied as plasters to cure pain and venereal sores [3]
Fruits	<ul style="list-style-type: none"> ➤ Can be given to cure Ulcer and Rheumatism
Seeds	<ul style="list-style-type: none"> ➤ Posses antivenom property

Table 3: Past Ethnomedicinal work on *Z. jujuba*

Plant part used	Folklore claim
Bark	The bark is used to cure boils and a good treatment of Dysentery [11]
Leaves	The leaves are antipyretic and helps in reducing obesity [12]
Fruit	Laxative and Aphrodisiac [12]
Seeds	Used in treatment of eye disease and helps in leucorrhoea [13].

DISCUSSION:-

Plants have medical value because they contain chemical substances that have a specific physiological function on the human body. Flavonoids, tannins, alkaloids, and phenolic compounds are the most important of these bioactive substances [14]. Herbal remedies play a significant function in regulating human health issues and serve as the foundation of the Indian traditional medical system. The global market for plant-derived pharmaceuticals is expanding rapidly these days. As a result of the loss of many medical plants, over-exploitation of medicinal plants has become a major issue [15]. *G. sylvestre*'s therapeutic effects are related to a class of oleanane-type triterpenoidsaponins known as gymnemic acids [16]. El-shafey et al. (2013) demonstrated that the lipid-lowering action of flavonoids and saponins derived from *G. sylvestre* could be attributed to inhibition of pancreatic lipase activity [17]. Metformin, the first anti-diabetic medication discovered from *Galega officinalis*, was likewise a herbal formulation [18]. As a result, additional *Gymnema* species should be studied in depth in terms of ethnobotany, phytochemistry, and pharmaceuticals. This will aid in the development and formulation of new bioactive chemicals for application in novel drug research.

Phytochemical analysis of *P. dulce* indicated the presence of a variety of phytochemicals, including alkaloids, flavonoids, glycosides, saponins, steroids, and tannins. Pithedulosides A-G are seven saponins extracted from the seeds of *P. dulce*. The heart wood of *P. dulce* has been shown to contain anti-tumor chemicals such as B-sitosterol, campesterol, and stigmasterol [3]. The many *Pithecellobium* species have been claimed for the treatment of various illnesses, however they are still under utilised. The therapeutic qualities of *Z. jujuba*, an indigenous plant, are linked to a wide set of secondary metabolites. This plant contains 64 alkaloids, 16 glycosides and flavonoids, 14 terpenoids, and other phytochemicals. Triterpenoic acids isolated from *Z. jujuba* were investigated for cytotoxicity against tumour cell lines in vitro. Lupane triterpenes exhibited strong cytotoxic activity [19]. The significance of such constituents in health goods and food supplements is underappreciated. The utilisation of such constituents in Pharmaceuticals was overlooked by commercial businesses.

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