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OBSERVATIONS ON TEPHROSIA PURPUREA (L.) PERS. GROWING IN AND AROUND GAUHAT (ASSAM)

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ABSTRACT: Observations on Tephrosia purpurea (L.) pers. Which is known as Sarapunkha in Ayurveda, growing in and around Gauhati (Assam) has been systematically discussed in this paper. The Ethno-botanical records of the plant are also described here.

Tephrosia purpurea (L) Pers. Has a recognized place as medicine in Indigenous systems of medicine.

In Ayurveda it is known by the name of 'Sarapunkha' and considered as anthelmintic for a number of worms, specially Ksara (ash) of the Pancanga is utilized for the purpose. It is said to possess laxative properties and considered as a blood purifier. Root is given in tympanitis, dyspepsia and chronic diarrhea whereas the bark of the fresh root is ground with pepper and the pills are orally used to control piles and the obstinate colic.

The Plant: Belongs to the family Fabaceae. It is a sub-erect perennial herb of 30 45 cm. hight, leaves are composed of leaflets, total length of the whole leaf is 2-6 inch long. Racemes are 3-6 inch long, lax-flowered, corolla is purple coloured and size of pod 1 to 1.5 inch and are straight and thinly pubescent. Pods contain 4-6 seeds of greenish – grey, smooth and speckled seeds in size which sometimes number upto 10. Plant flowers during rainy season, fruiting is achieved upto January and there after the upper portion of plant starts drying.

Distribution: It is found wild in wasteland, on road sides, prefers dry places and grass-lands all over India ascending the Himalayas upto 6000 ft.

It was found abundantly growing in and around Gauhati where the climatic factors is as follows.

Gauhati is located at the South Bank of might river Brahmaputra. Latitude 26.10 N., Longitude 91.50 E at 163 feet above sea level. It is surrounded by small hills and famous Kamakhya temple is located at the Nilachal hill on the same Southern Bank.

*Annual Rainfall (in mm.) – 1477 to 1962,
Humidity (in P.C) – 80 – 83.
Highest temperature – 39.
Lowest temperature – 6.

(Abstract from the Meteorological data for year 1973 to 1977. Received by Courtsy of Meteorological Centre, Borjhar, Gauhati).

Some soil samples of the places where it was growing and the results are given below:
(Abstract from data for 5 soil samples one each from Jalukbari, Engineering college campus, Borjhar (Yogipara), A.P.R.O. (Sat mila), near Ayurvedic College).

(Analysed by the Fertiliser Corporation of Indi Ltd. Chandmari, Gauhati).

Tephrosia is a large genues of herbs, having 35 species, only 10 species have been recorded in Flora of British India (Hooker 1889). There occurs quite a large number of varieties in India.

Texture	pH	Conductivity (Indicating the level of Nutrient Salts)	Organic Carbon (Indicating Nitrogen)	Phosphorus
Sandyloam	6.1 to 6.5 (Normal)	0.100 (Normal)	0.98 to 1.54 (High) (In one sample 0.56) Medium	19.7 to 23.6 kg/ha (Medium) (In one sample 137.9 (High) Pottassium 93.0 to 186.0 kg/ha (Medium to High)

Ethnobotanical records: Much of our knowledge of medicinal plants can be obtained from tribal people. Since the authors were surveying various tribal pockets in dense forests of Brahmaputra valley of Assam, they observed certain specific cures for particular diseases. Majumdar et al. (1978) reported that after the beginning of conception, the root of 'Bon-nil' (Tephrosia purpurea L.) penetrates through the vaginal passage to the uterus and is kept in position for 10-15 minutes. It is said that zygote is destroyed within the period of 15 minutes. As abortion causes much bleeding juice of 'Dorboribon' (Cynodon dactylon (L) Pers.) is given to control and check it.

Roots are used by some (Bodo, rava, Kachari) tribal people of the Brahmaputra Valley of Assam for flavouring milk (Boissya and Majumder, 1980).

Drug obtained from Tephrosia is said to 'Purify' the blood, used in treatment of boils, pimples etc.

Phyto-chemical investigations were carried using method as outlined in Paech Tracey (1955) Fluorence studies of powdered drugs

were made as per methods of chase & Pratt (1949). Histological investigations of tissue using methods as recommended in Trease (1957) Yougkon (1950). Usual standard Agricultural Procedures followed during cultivation trials.

Observation

Macroscopy Drug : Roots, leaves and seeds.

Roots: Pale yellow-brown taproot systems, with secondary and tertiary branches. At places bacterial nodules present. Scars present on old tap root – 3 cm. to 5 cm. in diameter.

Microscopy: Usual dichotomous, tissue system Cork cells cubical. Secondary cortex contain amorphous mases of resins, tannins other ergastic substances.

Fluorescence studies of dry drugs:

Drug/part	U.V
Leaves:	Green / blue
Roots :	Dark purple
Stems:	Scarlet – purple
Fruits:	Chocolate brown purple

Active constituents: Rotenone with % in different parts Leaf: 0.003%; stem: 0.013%; Flowers: 0.005%; Seed: 0.120%; Fruits: 0.120%; Root: 0.357%.

Toxicity Evaluation: Alkaloid.

(Inchthological toxicity).

Action on Aphida (in cultures).

Extract of Mortality rate of Aphids.

Leaves – 6.65%; Stem-9.65%; Roots - 81.50%.

Phytochemical screenings:

Drug Part	Flavonoids	Alkaloids	Tannins	Glycosides	Resins
Leaf:	+	++	++	++	+
Root:	++	+++	++	+	+
Stem:	+++	+++	+++	++	++
Pods:	+++	+	+++	+	++

Discussion & Conclusions:

Tephrosia purpurea (L) Pers. 'Sarapunkha' is used in Indian system of Medicine for ages, it was thought a critical examination of the plant and it's varieties would be worth rewarding.

Cytologically two types were observed n=11. N=12; diploid (n=11) and tetraploid (n=22) were also observed. Tetraploids, allopollyploidy, notice in various group of these plants.

Seed is considered anthelmintic, antipyretic, used for ulcer, leprosy, asthma, bronchitis, disease of liver, ear, spleen and tumours (Majumder, 1980).

Ethnobotanical records show that it is used in abortion and flavouring milk Leaves useful in Jaundice.

From fore-going paragraphs it is seen that the drug plants has high potentials for evaluation to newer drug.

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