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A SURVEY OF ETHNOFLORA OF PHARKIYA REGION OF KOSI BELT

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Key words : Ethnoflora, Pharkiya region, Rare germplasm, Bioconservation.

An extensive survey through regular visits was carried out covering an area extended up to 752 sq. kilometers in the Farkiya region of the Kosi Belt in Bihar State. During the field visit, 16 target populations mostly of extremely poor ethnic people have been recognised. The total and partial dependence on plants of these ethnic people came to notice under our present endeavour. During the course of study some rare plants vis-a-vis ethnic community have been put on record.

INTRODUCTION

Since the time immemorial, human race largely depended on plants for its survival. Ancient people discovered and used plants as food, medicine, shelter, fodder, etc. Many of such plants which came under human selection were domesticated and many others were left unnoticed and grew as wild species. The pattern of evolution of these two categories of plants followed different dynamics and destinations. Only recently, emphasis has been given on such marginalized wild species in spite of the fact that these are important ingredients in the survival of many ethnic groups of human population.

In the present research, an attempt has been made to assess the presence and the value of some ethnic germplasms found in the Pharkiya region of Koshi Belt of Bihar.

Study Area :

A. Historically, it is said that during the time of Emperor Akbar, Raja Todarmal had been entrusted with the duty of making the survey of the entire area but he failed to do so, because of the thatching grasses and shifting of the path of rivers. He advised that this area should be excluded; in other words, he adopted the policy of 'Farak kiya' or excluded and that is why the area is known as 'Pharkiya Pargana or region'.

B. Topography : Pharkiya region lies in between 25° 15′ -25° 50′ N latitude and 86° 20′ 86° 54′ E longitude. Its average maximum and minimum temperature ranges between 36.6° C and 20.9° C.

The average annual rainfall is 557.5mm. The soil composition comprises pH- 8 (Alkaline)Ec - .68 (Normal) Oc -.61 (Medium) N- 225 (Low), P_2O_5 = 25 (Medium) K_2O = 175 (Medium).

Geographically, this region has saucer-shaped depression and during rainy season, flood is an annual feature because presence of seven perennial rivers like Ganga, Burhi Gandak, Bagmati, Kamla, Kareh, Kosi and Ghaghri.

The area is the homeland of an ethinic community called 'Mushahars' or the rat catchers. According to their tradition, Parmeshwar (God) created man and gave him a horse to ride. The first Mushahar decided to dig holes in the belly of the horse to fix his feet as he rode. This offended Parmeshwar who punished them by making them rat catchers.

They are considered one of the most downtrodden groups and suffer tremendously form their belittled status in the society. They are one of the most marginalized groups in India. They are short in stature with long narrow head and board nasal feature.

Traditionally, they follow their tribal faith and worship their family deity and village deity (Dinna-Bhadri) as well as the other deites of the wider Hindu faith.

The Mushahars are found more or less throughout Pharkiya region and their population is about one lac.

MATERIALS AND METHODS

Regular field visits were conducted during the period ranging from pre-monsoon to post-monsoon season for the last five years. Certain ethnic populaces such as Mushahar, etc., have been targeted and their dependence on some wild germplasms have been identified. The data so collected have been tested and confirmed using information collected from traditional healer, village Vaidyas, Mali and some elderly knowledgeable informants. Various plant parts of the collected species are being used variously by the local communities (Graph-1). The germplasms were collected and identified scientifically through voucher species (Haines, 1924; Hooney, 1950) and scientific literatures (Cottton,1996; Ferms Vorth,1985; Jain 1981,1986, 1987, 1989, 1996, 1999; Jain *et al.*,1967; Janki Amal,1996; Schulte, 1962 and Sriwastwa, 1986). Some of the very rare germplasms have been selected for *ex situ* conservation in the plant conservatory of Kosi College, Khagaria and Botanical Garden of University Dept. of Botony, T.M. Bhagalpur University, Bhagalpur. The same has been done successfully.

From the study area a total of 35 plant species belonging to 27 families (2 monocots and 25 dicots) have been collected, identified and their utility with context to ethnic groups have been known. The germplasms thus screened are described in Table-1.

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TABLE-1 : Plants of Ethnobotanical Value

S. No	Botanical Name & Family	Local Name	Parts Used	Ethnobotanical Uses
1.	*Achyranthes aspera*, Linn (Amaranthaceae)	Chirchiri	Root, Leaves	(i) The paste of leaves is used to remove the pain and healing of wound. (ii) The root is tagged below the navel of pregnant mother for easy delivery.
2.	*Acorus calamus*, Linn (Araceae)	Bach	Rhizome	(i) It relieves the feeling of overfulness of stomach and increases **appetite**. (ii) It acts as expectorant and useful in **asthma**. (iii) The oil from rhizome is a good nerve stimulant.
3.	*Aegle marmelos*, Correa Rutaceae	Bel	Roots, Fruits and Leaves	(i) Roots, fruits and leaves are **antibiotic**. (ii) Root barks are used in **fever**. (iii) The unripe or half ripe fruits improve appetite. (iv) Leaves are used in religious functions.
4.	*Asparagus racemosus*, Wild Liliaceae	Satavar	Roots	(i) It helps in blood purification. (ii) It checks**diarrhoea** and **dysentery**.
5.	*Azardirachta indica*, Juss Meliaceae	Nim	Leaves, Twigs Barks and Roots	(I) Barks are used in fever and in **skin diseases.** (ii) Leaves and roots are used in skin diseases and blood purification. (iii) Dried leaves are placed among clothes to keep moths away.
6.	*Bryophyllum calcicum*, Salis Crassulaceae	Patharchur	Leaves	(i) It is helpful in diminishing the stones of gall bladder and kidney. (ii) It is also used in dysentery.
7.	*Butea monosperma*, Lamk Fabaceae Palas	Palas	Seeds and Root barks	(i) The seeds are used as **antihelminthic**. (ii) The seeds, pounded with lemon juice, are applied on **itch**. (iii) The root have barks have been found to have some action on **blood pressure**.
8.	*Calotropis gigantea*, Br Asclepiadaceae	Madar	Flowers and Fruits	(i) After frying in cow's ghee, flowers are used in asthma. (ii) Cotton of fruits is eaten by cattle in overfulness of stomach.
9.	*Centella asciatica*, Linn Umbellifereae	Brahmni	Leaves	(i) It provides strength and tonic to heart and nerves. (ii) It removes constipation and leaves promote urination. (iii) Leaf juice Mixed with petroleum is applied on **rheumatism**.
10.	*Coccinia cordifolia*, Wight and Arn Cucurbitaceae	Kundari	Fruits, Leaves	(i) Fruits are used in blood purification. (ii) Leaves are used in increasing eye sight.
11.	*Cyperus palustris* Cyperaceae	Chichor	Tubers	(i) Raw tubers are full of nutrients. By eating them body becomes sturdy. (ii) Breads are made by flour of tubers. (iii) Ethnic groups used these tubers **ornamentally** by forming **garments**.

S. No	Botanical Name & Family	Local Name	Parts Used	Ethnobotanical Uses
12.	*Dalbergia sissoo*, Roxb Fabaceae	Shesham	Leaves and Bark	(i) Decoction of leaves is used in checking **blood pressure**. (ii) Paste of leaves is used in healing of **wound**. (iii) Barks are used in **arthritis**.
13.	*Eclipta prostrata*, Linn Asteraceae	Bhangrua	Entire plant	(i) It helps in checking bleeding. (ii) It **purifies blood**. (iii)It is good medicine of jaundice.
14.	*Emblica officinalis*, Gaerth Euphorbiaceae	Amla	Fruits and seeds	(i) Liquor made from fruits is useful in **indigestion**, **anaemia**, **jaundice** and in **heart complaints**. (ii) Dry fruits are used in diarrhoea and dysentery. (iii) Seeds are useful in ashthma and stomach disorder.
15.	*Grewia asiatica*, Brandis Tiliaceae	Falsa	Fruits and Bark	(i) Fruits are used in blood purfication. (ii) Underground barks are used in stomach disorder.
16.	*Holarrhena antidysenterica*, Linn Apocynaceae	Indrjau	Bark and seeds	(i) They are used in **chronic dysentery**. (ii) They are **antipyretic** and also used in **diabetes**.
17.	*Jatropha curcas*, Linn Euphorbiaceae	Baghandi	Stem and seeds	(i) Stem helps in **cleaning** of **teeth**. (ii) Seeds are used in **blood purification**.
18.	*Leacus aspera*, Spreng Labiateae	Gumba	Entire plant	(i) The juice of leaves is used in **removing headache** by pouring two to four drops in nose. (ii) It is also used in **diabetes**. (iii)Taken orally to **decrease sugar level**.
19.	*Moringa oleifera*, Lamk Moringaceae	Sahjan	Fruits, leaves and twigs.	(i) These are used in **diabetes and blood pressure.** (ii) These act as **blood purifier.**
20.	*Murraya koenigii*, Spreng Rutaceae	Curry Patta	Leaves	(i) Leaves are used in **flavouring of food**. (ii) They are used in **coughing and asthma**. (iii) They are also used in **blood purification** and **diabetes**.
21.	*Nyctanthes arbor-tristis* Spreng Rutaceae	Curry Patta	Leaves	(i) Liquor of leaves is used in removing **fever**, **headache** and **bodyache**. (ii) They are also used in diabetes.
22.	*Ocimum sanctum*, L Labiateae	Tulsi	Roots, leaves and seeds	(i) Decoction of root is given in malarial fever to bring about sweating. (ii) the juice of leaves is useful in **bronchitis, catarrh** and **digestive complaints.** (iii) It is dropped in ears to remove earache. (iv) Seeds are useful in complaints of **urinary system.**
23.	*Oxalis corniculata*, L Oxalidaceae	Khatti-Butti	Leaves	(i) The juice of leaves is used in checking diarrhoea and dysentery.
24.	*Parthenium hysterophorus*, Linn Asteraceae	Congress grass	Entire plant	(i) It is an exotic plant (Native of northern Mexico). Ethnic groups used these plants in **blood purification and diabetes**. (ii) Due to presence of latex, these are used as **hypoallergenic**. (iii) Due to resin, these are used as pesticides.
25.	*Ricinus communis*, L Euphorbiaceae	Andi	Leaves and seeds	(i) The leaves are used in removing **sacral pain**. (ii) Oil from castor seed are used even as **purgative for pregnant women** and **during menses.** (iii) Oil is used in **eczema** and **dermatitis**.

26.	*Rosa involucrate*, Roxb Rosaceae	Deshi Gulab	Flowers	(i) Paste of petals is used in headache by using on forehead.
27.	*Swertia chirata*, Roxb (Gentianaceae)	Chirayata	Entire plant	(i) It is used in fever, **diarrhoea** and **weakness**.
28.	*Syzygium cominii*, Gaertn Myrtaceae	Jamun	Fruits, barks and seeds	(i) Its ripened fruits and powder of seeds are used in **diabetes** to check **blood sugar**. (ii) Barks are used in **sore throats**, **bronchitis**, **asthma**, **ulcer** and **dysentery**. (iii) The fresh juice of barks with goat's milk is given in **diarrhoea**.
29.	*Terminalia arjuna*, Wight and Arn Combretaceae	Kohva	Barks	(i) Barks are used in **fever**, **fractures** and constusions. (ii) Barks are also taken as a **cardiac tonic**.
30.	*Tinospora cordifolia*, Miers Menispermaceae	Guruch	Stem	(i) Stems are used in **diabetes** and **stomach disorder**. (ii) Juice of stem **checks acidity** and **excess urination**.
31.	*Vernonia cinerea*, Less Asteraceae	Sohrai	Leaves and seeds	(i) Leaves are helpful in **removing ticks** and mites of cattle. (ii)The powder of seeds is used in **diabetes**.
32.	*Vitex negundo*, L Verbenaceae	Sinuar	Leaves	(i) Paste of leaves is used in removing **headache**. (ii) It is also applied in decreasing **swelling of the body**.
33.	*Withania somnifera*, Dun Solanaceae	Ashwagandha	Roots and Leaves	(i) Powder of leaves is applied in **ulcer** and **inflammations**. (ii) It is also useful in **blood pressure**, **diabetes** and **cough**. (iii) It removes **sexual weakness**. (iv) it promotes urination.
34.	*Xanthium oriantale*. L Asteraceae	Khagara	Fruits	(i) Powder of fruits is used in toothache.
35.	*Ziziphus jujube*, lamak Rhamnaceae	Ber	Leaves and branches	(i) Smoke of burning leaves and branches is helpful in **remedy of piles**.

Among the various plant species collected and studied from the area, a few deserve special mention, because they are endemic and have become very rare. These are *Cyperus palustris* (Ver-Chichor), *Scirpus grossus* (Ver, Kesoor) of family Cyperaceae.

Cyperus palustris and *Scirpus grossus* yield large tubers which are being used traditionally by the ethnic communities and poor labour class people during the times of food scarcity and starvation. These species have rightly been called "Famine Thermometer" by O'Melly (1925). Similarly the local wild rose is an endemic variety giving very sweet scent as mentioned by O'Melly.

'Chichor' and 'Kesoor' along with collected specimens, their tubers and uses by the ethnic community have been depicted in the photographs (Fig. 1A, 1B, 1D & 1E). Uses of various plant parts have been shown through dendrograph (Graph 1).

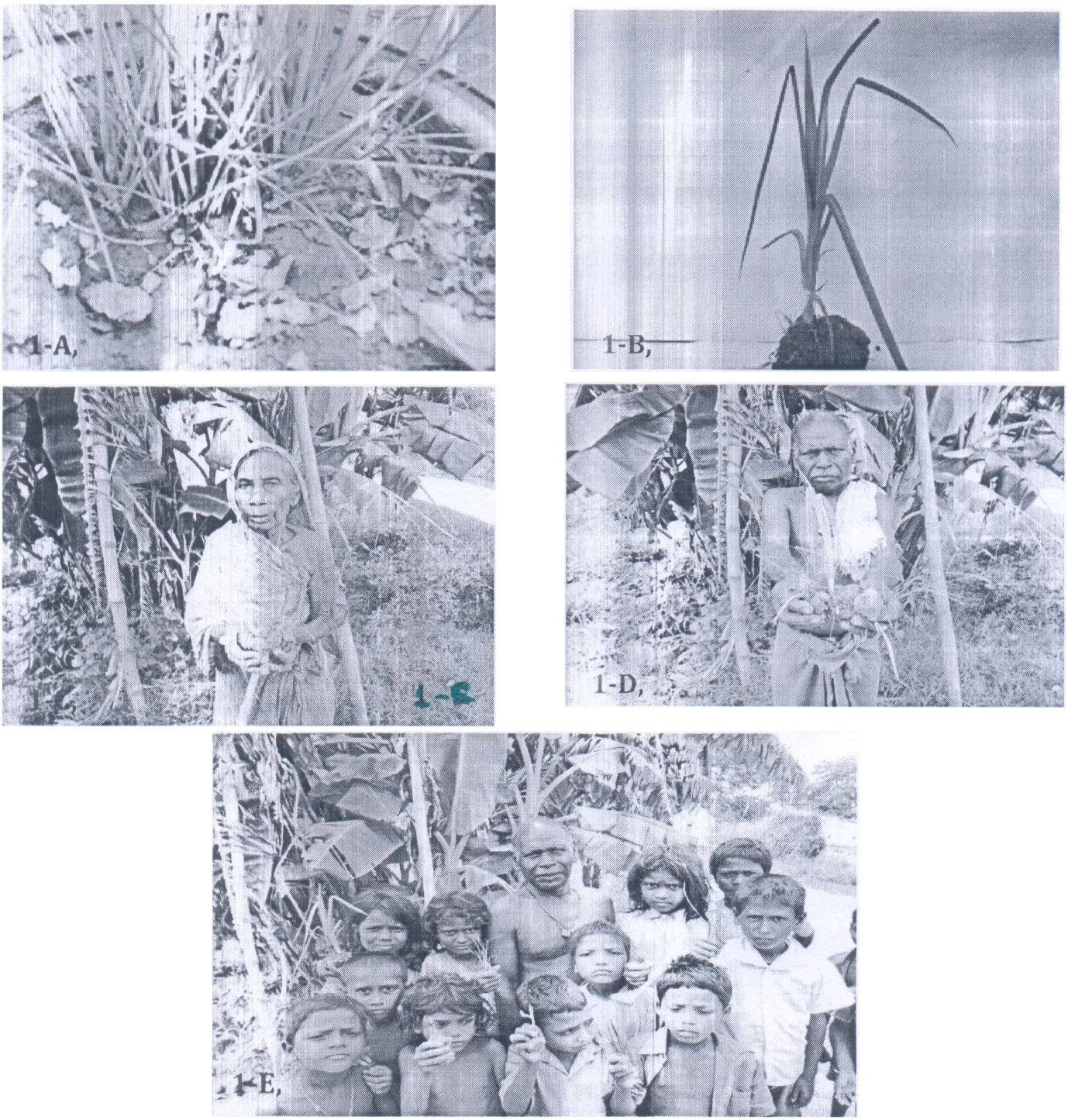


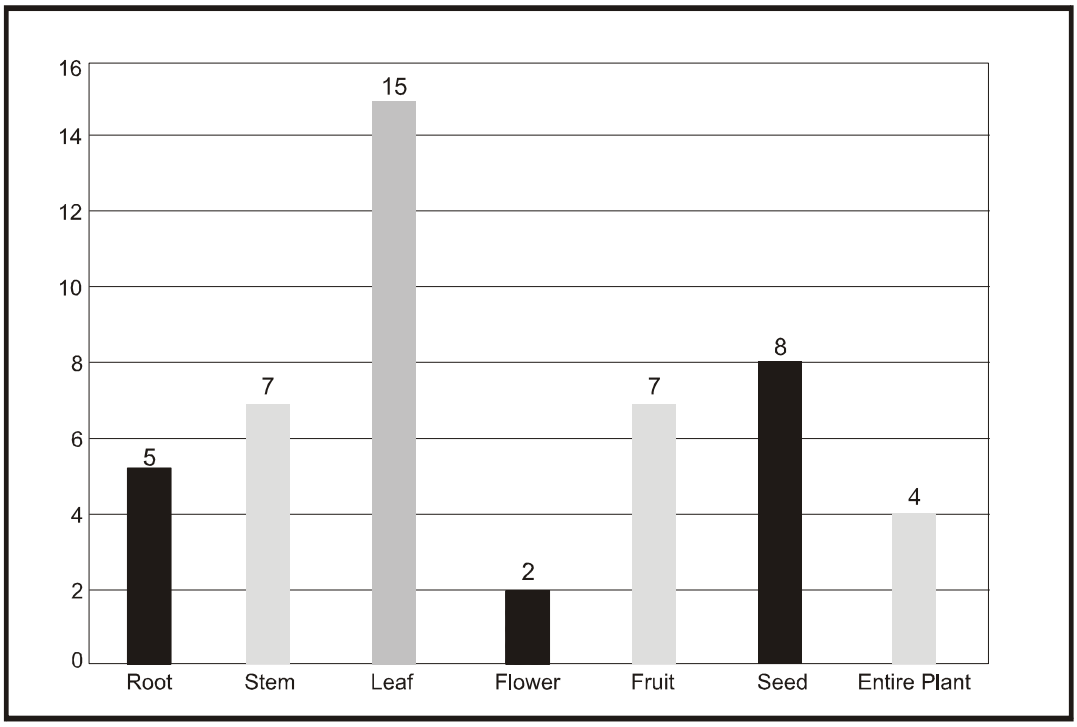
Figure - 1 : 1-A, *Cyperus palustris*- potted plant; 1- B, *Scirpus grossus*- Collected from the field. 1-C, & 1-D, Locals with the collected plants; 1-E, Family of the rat catcher.

TABLE - 2A : Habit of Plants

Herbs	Climber	Shrubs	Trees
18	01	07	09

TABLE - 2B : Plant parts used in number of plants species.

Plant Parts Used	Root	Stem	Leaf	Flower	Fruits	Seed	Entire Plant
Number of Plant Species	05	07	15	02	07	08	04



GRAPH-1: Plant parts used in number of plants species.

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