

Ethnobotanical use of plants as living fence in and around Radhanagar Village of Jhargram Block, Paschim Medinipur District, West Bengal

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Abstract

In this communication 50 plant species are reported which are used by the local people of Radhanagar Village in Paschim Medinipur district of West Bengal. All the species are used primarily for living fences but some species among them are used as fuel wood, fodder or along with production of other Non Woody Forest Produces (NTFPs) even plants as fish stupefying kind. These are the common practices going on traditionally and people use empiric knowledge for those plant parts knowingly or unknowingly from men of old age-practice. Perhaps, the people planted a majority of the plants which are primarily used as fence plants but some of them now flourish and producing quality standard wood. Therefore, a good number of seeds and propagules obviously recorded from those plants which ultimately resemble a nursery bed of nature for long term conservation of species from these relic sites in a sustainable manner.

Key words: Radhanagar Village, living fences, ethnobotanical use, Sustainable conservation.

Living fences are fences made by plants of different kinds which are aerial and stout, median to moderately grown at boundaries of house premises in village or sub-urban areas. These include all shrubs excluding heavily grown bushy shrubs but not big or heavy sized trees. Maximally all are planted or placed previously for short term protection but at the

end, tends to become permanent one. Some are grown at the end of personal land boundary, or near by the fences of concrete type through seeds during monsoon. Say for example, *Inga dulcis* (Roxb.) Willd., *Acacia torta* (Roxb.) Crab etc. Fact is that, if planted these elements once, the reflection tends to many years. It would be cost effective also. Say for example,

50 years or more as per the care of the fences and management also this is site specific also. So, it is fruitful and less time consuming even less expensive in compare to dead or cemented fencing. This is due to overcoming the local threat of grazing, browsing, attack by wild animals and entry of human beings even stout protection of land boundary by exotic threat. To overcome these problems, common villagers developed unique live fencing methods through trial and error methods⁴. Not only this, by this way they also protect some valuable species for long time conservation. So, as a whole it is a local conservatory for some rare and valuable medicinal plants and also act as nature made plant nursery for near future in a eco-sustainable basis.

Area under study :

The area represents village shrubberies, roadside thickets, fallow and boundaries of village roads, margin of ponds and low muddy bund (high ridge) of cultivated lands. All are taken for consideration in the study purpose in village of Radhanagar (Village code 3046400) under Jhargram Block of Jhargram Sub Division. It is only 4 kms from town Jhargram and near about ½ km from Sevayatan Village which is nearer to Dherua. The villagers are of general caste along with some tribes like *Santals, Kumar, Bagal, Bhukta and Bhumij*. The tibals are very much dependant on forest for their economy though they are growing a small amount of cultivars in their agricultural fields. It is so tiny, that throughout the year they do not earn sufficient crop and therefore they depend on collection of non timber forest Produces (NTFPs/NWFs). Very much hardy work they have *i.e.* carrying of fuel woods and green sal leaves (*Shorea robusta*) from nearby village forests. Therefore, they are trying to set some plantation programme

around their hut which get protection from the attack of wild animals, quadrupeds and for their supplementary use of plants for ethnobotanical purpose.

Extensive field visits were carried out to different places of Radhanagar Village since 2008 to 2012 with some villagers as resource persons when second author was placed in Jhargram Raj College as Assistant Professor of Botany with a minor research Project on Ecology funded by UGC, Eastern Regional Office, Kolkata. Field observations and ethnobotanical parameters were recorded by direct way with the help of local villagers at the time of fencing. The management of the living fence elements was observed throughout the season by regular monitoring of the field. Interviews and cross references were studied using Participatory Rural Appraisal (PRA) technique. Plant specimens from field were collected and processed for preparing herbarium specimens and for identification using BSI data collection standard. Specimens were carefully studied, critically examined and cross checked with the specimens housed in the CAL herb, BSI, Shibpore, Howrah. For confirmation of specimens, relevant literature was consulted^{6,12} local floras were consulted. Relevant literature have been collected and consulted^{1-5,7-15} for the preparation of the manuscript. The voucher specimens were housed in Departmental museum of Sevabharati Mahavidyalaya, Kapgari, Paschim Medinipur.

Result revealed that, the village people list 50 plant species belonging to 43 genera and 23 families as elements of live fence. The various plants they used for fencing are listed alphabetically along with family name, local name, habit, habitat; conditions they prevail are appended below (Table-1):

Table-1. Ethnobotanically important plants used for fencing purpose at Radhanagar Village of Jhargram Block, Paschim Medinipur District, West Bengl, India

Sl. No.	Name	Family	Local name	Remarks
1.	<i>Acacia nilotica</i> (L.) P.J.H. Hunter & Mabb.	Mimosaceae	Babla tree	Fodder plant for goats and sheep. Fig. 6 in plate 1
2.	<i>Acacia torta</i> (Roxb.) Crab	Mimosaceae	Khadir/Khair	Thorny hedge
3.	<i>Adhatoda vasica</i> Nees.	Acanthaceae	Vasak shrub	Medicinal
4.	<i>Agave americana</i> L.	Agavaceae	Kongra shrub	Fibre and cord
5.	<i>Alangium salvifolium</i> (L.f.) Wangarin	Alangiaceae	Ashphal/ Ankartree	Wood for agricultural implements
6.	<i>Albizia lebbeck</i> (L.) Buch.	Mimosaceae	Lal Khiris tree	Wood used in Furniture, Fig. 3 in plate 1
7.	<i>Alstonia scholaris</i> (L.) R.Br.	Apocynaceae	Chatim tree	Medicinal
8.	<i>Azadirachta indica</i> L.	Meliaceae	Nim tree	Fuel and Wood
9.	<i>Bambusa arundinacea</i> (Retz.) Willd.	Poaceae	Kantabans	Thick mat
10.	<i>Barleria prionitis</i> L.	Acanthaceae	Gurja herb	Medicinal
11.	<i>Bombax ceiba</i> L.	Bombacaceae	Lalsimul tree	Filling fibre
12.	<i>Borassus flabellifer</i> L.	Palmae	Tal tree	Pillar
13.	<i>Bridelia retusa</i> (L.) A. Juss.	Phyllanthaceae	Burti tree	Thick mat
14.	<i>Caesalpinia mimusioides</i> Lam.	Caesalpinaceae	Seli herb	Thorny hedge
15.	<i>Carissa spinarum</i> L.	Apocynaceae	Bankarmacha	Fencing purpose
16.	<i>Ceiba pentandra</i> (L.) Gaertn.	Bombacaceae	Sada simul tree	Filling fiber for pillow and in cushion
17.	<i>Cissus quadrangularis</i> L.	Vitaceae	Harjora shrub	Meicinal plant
18.	<i>Diospyros melanoxylon</i> Roxb.	Ebenaceae	Kendu tree	Biddi leaf
19.	<i>Diospyros sylvatica</i> Roxb.	Ebenaceae	Bisgab tree	Fish stupefying agent
20.	<i>Duranta erecta</i> L.	Verbenaceae	Mehendi shrub	Hedge plany
21.	<i>Erythria variegata</i> L.	Fabaceae	Madar tree	For permanent pole
22.	<i>Eupatorium odoratum</i> L.	Asteraceae	Bhutbhairabi	Fencing hedge
23.	<i>Euphorbia tirucalii</i> L.	Euphorbiaceae	Tesiramansa	Fish stupifying agent

24.	<i>Ficus cunia</i> Buch. – Ham.	Moraceae	Domur tree	Permanent pole
25.	<i>Gliricidia sepium</i> (Jacq.) Kunth ex Steud.	Fabaceae	Manikanc- hantree	For permanent pole
26.	<i>Haldinia cordifolia</i> (Roxb.) Ridsdale	Rubiaceae	Kelikadam/ Karam tree	Wood and pole
27.	<i>Holarrhena antidysenterica</i> (L.) Wall.	Apocynaceae	Kurchi tree	Meicinal
28.	<i>Inga dulcis</i> (Roxb.) Willd.	Mimosaceae	Jilipi phal tree	Fruits marketed, Fig. 4 in plate 1 as hedge
29.	<i>Jatropha curcas</i> L.	Euphorbiaceae	Bagbherenda	Seed Commercial, Fig. 2 in plate 1 as hedge
30.	<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	Bherenda shrub	Tooth brush
31.	<i>Justicia genderussa</i> Burm. F.	Acanthaceae	Jgatmadan	Fencing purpose
32.	<i>Lantana camara</i> L.	Verbenaceae	Putus shrub	Hedge
33.	<i>Melia azedaracth</i> L.	Meliaceae	Nim tree	Fuel and wood
34.	<i>Millettia pinnata</i> (L.) Panigrahi	Fabaceae	Meli small one	Strengthen fence
35.	<i>Morinda angustifolia</i> Roxb.	Rubiaceae	Daruharidra	Pole
36.	<i>Mucuna pruriens</i> (L.) Dc.	Fabaceae	Alkush shrub	Special protection by stinging hairs
37.	<i>Opuntia stricta</i> (Haw.) Haw.	Opuntiaceae	Phanimonsa	Hedge
38.	<i>Pandanus fasciculatus</i> Lam.	Pandanaceae	Keya/Ketaki	Hedge
39.	<i>Pedilanthus tithymaloides</i> (L.) Poit.	Euphorbiaceae	Pedi shrub	Fig. 1 in plate 1 as hedge
40.	<i>Pluchea indica</i> (L.) Lees.	Astercaeaea	Bantulsi shrub	Fencing hedge
41.	<i>Premna latifolia</i> Roxb.	Verbenaceae	Premi tree	Pole
42.	<i>Samanea saman</i> (acquin) Merill	Mimosaceae	Siris tree	Wood and fuel
44.	<i>Streblus asper</i> Lour.	Moraceae	Seora tree	Pole
45.	<i>Tiliacora racemosa</i> Coleb.	Menisperm- aceae	Teliokra tree	Mat macking
46.	<i>Trewia nudiflora</i> L.	Euphorbiaceae	Phalsa tree	For wood
47.	<i>Vitex negundo</i> L.	Verbenaceae	Nisinda tree	Fig. 5 in plate 1
48.	<i>Zizyphus mauritiana</i> Lam.	Rhamnaceae	Kul tree	Pole and Fruits
49.	<i>Zizyphus oenoplea</i> Lam.	Rhamnaceae	Kankul shrub	Pole
50.	<i>Zizyphus rugosa</i> Lam.	Rhamnaceae	Kathkul tree	Pole

PHOTOPLATE-1 Plate-1 Living Plant species in Village fence at Radhanagar, Jhargram, Paschim Medinipur, West Bengal



Fig. 1. *Pedilanthus* sp. in living Fence,



Fig. 2 *Jatropha* sp. in village Fence along with *Amorphophalus* sp.



Fig. 3. Fuel wood yielding spp. in living fences



Fig. 4. *Inga* sp. yield edible fruits in village fence



Fig. 5. *Vitex* sp. (Left hand side) and *Jatropha* (Right)



Fig. 6. *Acacia* sp. as thorny tree species in fence

(Photograph taken by authors, by Canon Camera with 4x optical zoom having 12.1 mega pixels, A 1200 PS)

Ethnobotanical study is a critical study as because it needs to keen observation and cross interview as well as proper verification of data at field as well as in laboratory. Knowledge on Participatory Rural Appraisal Technique (PRA) is mandatory for field workers during field visit. The second author having good knowledge on PRA training from IBRAD as well as from Centre for Natural Studies, Paschim Medinipur (Earst while Midnapore) during the year 1996-1998. Not only this, field observation on plants as well as on people of the said community is very much essential before the preparation of documentation. This actually made on the basis of project report and some data supported by UGC during ecological study in lateritic south west Bengal including ethnic knowledge. So, as a whole, full ecology based critical study is needful after this publication to press the practical overview in the same site for economic basis. Hope that, this would help much more importance for the students and researchers from different fields of study in the lateritic area which is a treasurer of plants of ethno-medicinal as well as ecological importance. So this need based science actually requires some co-research and extension activities in the field of social science and forestry including agriculture to develop the community a grand success during the forthcoming days. Not a single species, if used so many species may be used as living fence elements in the said area through proper management if imposed. So, trial may be taken for consideration in the department of Institutes for raising herbal garden as well as for botanical garden to protect plants of ecological importance or for the purpose to protect other elements in living form.

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