

Traditional Plant Fencing and its Conservatory Nature in Kasaragod District, Kerala, India

Subrahmanya Prasad K* and Raveendran K

Department of Post Graduate Studies & Research in Botany
Sir Syed College, Taliparamba, Kannur – 670 142
Email:prasadks.1090@rediffmail.com

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Abstract

Villages of Kasaragod District are centres of agricultural practices. The fields often face the threat of wild animals and grazing. To overcome these problems temporary or permanent fences are made using different plants. These fences not only protect the fields but also play an important role in the conservation of some plants. The paper lists 67 plant species used by the villagers of Kasaragod District, Kerala for fencing.

Key Words :, traditional fencing, plants, Kasaragod District

Introduction

Kasaragod District is located between 11⁰18¹N and 12⁰48¹N and 74⁰41¹E and 75⁰26¹E. It is bordered on the North and East by Karnataka State, while the Western boundary is formed by a long stretch of coastline and South by Kannur District. Topographically it consists of a sandy coast, an undulating plateau and mountainous high range. The midland covers 2/3 of the total area and plays a significant role in the economy as these are the centre of agriculture. Like anywhere else these areas also face the threat of grazing, attack by wild animals and entry of human beings. To overcome these problems the rural people developed unique fencing methods through trial and error method. The village people construct permanent or temporary boundaries around their field or courtyard using different plants. Present study is aimed at the elucidation of different plants used for traditional fencing.

Methodology

Extensive field trips were carried out to different villages of Kasaragod district. Personal observation of the process of construction of these fences were done and recorded. Informations regarding the different plants used for this purpose, their properties, uses, effectiveness are collected through personal interview with the villagers. Plants were collected, made into herbarium, identified using floras (Hooker J D, 1892 – 1897; Gamble J S & Fischer C E C, 1915 - -1936; Manilal K S & Sivarajan V V,1982; Mathew K M, 1984; Ramachandran V S & Nair V J,1988; Gopalakrishna Bhat K,2003; Anil Kumar *et al*;2005). The voucher specimens were deposited at the SSC herbaria.

Observations

From present study it is clear that the village people are using a total of 67 plant species belonging to 46 genera and 25 families, either live or in dried state for fencing. The different plants used for fencing, their family, local name, habit, condition are listed in table 1. 36 spinous or thorny plants are used for this purpose as these help to prevent entry into fields. The plants with thick foliage cause obstruction to sight of cattle, there by preventing grazing. *Adhadoda zeylanica* Medikus., *Duranta erecta* L., *Euphorbia tirucalli* L., *Hibiscus* spp., *Jatropha* spp., *Justicia gendarussa* Burm.f., *Pedilanthus tithymaloides* (L.) Poit., are preferred due to their unpalatability to cattle. *Acacia caesia* (L.) Willd., *A.torta* (Roxb.) Craib., *Caesalpinia mimosoides* Lam., *Lantana camara* L., *Mucuna pruriens* (L.) DC., *Pandanus* spp. make their presence as they form impenetrable thickets. Bamboos, cacti, *Jatropha* spp., *Pandanus* spp. and *Vitex* spp. prevent soil erosion. *Bambusa arundinacea*(Retz.) Roxb., *Bombax ceiba* L., *Ceiba pentandra* (L.) Gaertn., *Hopea ponga* (Dennst.) Mabberly, *Pandanus* spp., *Terminalia travancorensis* Wight & Arn. and *Vitex* spp. act as wind breakers and also increase the firmness of the fences. Ornamental plants are often planted along these fences to impart attraction to eyes while in some areas these were supplemented with many fruit yielding climbers to make them economically important.

Table 1. Plants used for Traditional Fencing.

Sl. No.	Botanical Name	Family	Local Name	Habit	Condition	Role
1.	<i>Acacia caesia</i> (L.) Willd.	Mimosaceae	'Kaadu seege' Chende mullu'	Climbing prickly shrub	Dried	Mechanical barrier
2.	<i>Acacia chundra</i> Willd.	Mimosaceae	'Kaachu', 'Khadhira'	Small tree	Dried / Live	Mechanical barrier
3.	<i>Acacia sinuata</i> (Lour.) Merr.	Mimosaceae	Seege	Prickly climbing shrub	Dried	Mechanical barrier
4.	* <i>Acacia torta</i> (Roxb.) Craib.	Mimosaceae	'Chende mullu'	Prickly climbing shrub	Dried	Mechanical barrier
5.	* <i>Adhatoda zeylanica</i> Medikus.	Acanthaceae	'Aadusoge'	Large shrub	Live	Planted on the boundary
6.	* <i>Agave americana</i> L.	Agavaceae	'Daddoli'	Stout shrub	Live	Mechanical barrier
7.	<i>Agave sisalana</i> Perr.ex Engelm.	Agavaceae	'Daddoli'	Stout shrub	Live	Mechanical barrier
8.	<i>Alangium salvifolium</i> (L.f.) Wangerin ssp. <i>hexapetalum</i> (Lamk.) Wangerin	Alangiaceae	'Ankole-mara'	Large straggling shrub	Dried / Live	Mechanical barrier
9.	* <i>Bambusa arundinacea</i> (Retz.) Roxb.	Poaceae	'Bidiru'	Large thorny bamboo	Dried / Live	Wind breaker
10.	<i>Barleria prionites</i> L.	Acanthaceae	'Mullu-gorate'	Spinous under shrub	Live	Prevents entry
11.	<i>Bobax ceiba</i> L.	Bombacaceae	'Kempu booruga', 'Shaalmalee'	Large tree	Live	Grown on boundaries
12.	<i>Borassus flabellifer</i> L.	Arecaceae	'Taali mara'	Tall palm	Dried leaf	Mechanical barrier
13.	<i>Bougainvillea x buttiana</i> Holtum & Standey	Nyctaginaceae	'Kaagadada hoovina gida'	Spinous climber	Dried/live	Mechanical barrier
14.	<i>Bougainvillea glabra</i> Choisy.	Nyctaginaceae	'Kagadada hoovina gida'	Spinous climber	Dried/live	Mechanical barrier
15.	<i>Caesalpinia bonduc</i> (L.) Roxb.	Caesalpiniaceae	'Gajjuga', 'Kalenji kaai'	Scandent prickly shrub	Dried	Mechanical barrier
16.	<i>Caesalpinia mimosoides</i> Lam.	Caesalpiniaceae	'Cheemullu'	Prickly scandent shrub	Dried	Mechanical barrier
17.	<i>Canthium coromandelicum</i> (Burm.f.) Alston	Rubiaceae	'Kaare-gida'	Stout spinous shrub	Dried	Mechanical barrier
18.	<i>Canthium rheedii</i> DC.	Rubiaceae	'Madimal kare'	Scandent spinous shrub	Dried	Mechanical barrier

19.	<i>Carissa carandas</i> L.	Apocynaceae	'Karande'	Large armed shrub	Dried	Mechanical barrier
20.	* <i>Carissa congesta</i> Wight.	Apocynaceae	'Karande'	Large armed shrub	Dried	Mechanical barrier
21.	<i>Caryota urens</i> L.	Arecaceae	'Baini mara', 'Eendu'	Tall palm	Dried leaf	Mechanical barrier
22.	<i>Casuarina equisetifolia</i> L.	Casuarinaceae	'Gaali-mara'	Large tree	Live	Wind breaker
23.	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	Rubiaceae	'Maggare'	Large armed shrub	Dried	Mechanical barrier
24.	<i>Ceiba pentandra</i> (L.) Gaertn.	Bombacaceae	'Booruga'	Large tree	Live	Planted on boundaries
25.	<i>Cereus peruvianus</i> (L.) Mill.	Cactaceae	'Kalli'	Arborescent cactus	Live	Prevents entry
26.	<i>Cordia cylindristachya</i> Roemer & Schultes.	Boraginaceae		Shrub	Live	Planted on boundary
27.	<i>Corypha umbraculifera</i> L.	Arecaceae	'Pane'	Tall palm	Dried leaf	Mechanical barrier
28.	<i>Duranta erecta</i> L.	Verbenaceae	'Hucchu elasi'	Erect or straggling shrub	Live	Planted on boundary
29.	<i>Erythrina variegata</i> L. var. <i>orientalis</i> (L.) Merr.	Papilionaceae	'Pongaare', 'Halivana'	Large armed tree	Live	Planted on boundary
30.	<i>Euphorbia antiquorum</i> L.	Euphorbiaceae	'Chadurakalli'	Fleshy spinous shrub	Live	Prevents entry
31.	* <i>Euphorbia nerifolia</i> L.	Euphorbiaceae	'Elekali'	Fleshy spinous shrub	Live	Prevents entry
32.	<i>Euphorbia nivulia</i> Buch.-Ham.	Euphorbiaceae	'Kalli'	Fleshy spinous shrub	Live	Prevents entry
33.	<i>Euphorbia tirucalli</i> L.	Euphorbiaceae	'Kolkalli'	Fleshy shrub	Live	Planted on boundary
34.	<i>Furcraea foetida</i> (L.)Haw.	Agavaceae		Stout shrub	Live	Planted on boundary
35.	<i>Gliricidia sepium</i> (Jacq.) Walp.	Papilionaceae	'Itina gida'	Small tree	Live	Planted on boundary
36.	<i>Hibiscus rosa sinensis</i> L.	Malvaceae	'Daasavala'	Large shrub	Live	Planted on boundary
37.	<i>Hibiscus schizopetalus</i> (Mast.) Hook.f.	Malvaceae	'Jaali daasavala'	Large shrub	Live	Planted on boundary
38.	<i>Hopea ponga</i> (Dennst.) Mabblerly	Diptero carpaceae	'Kalmara', 'Karimara'	Large tree	Live	Planted on boundary
39.	* <i>Jatropha curcas</i> L.	Euphorbiaceae	'Bili almuda'	Large shrub	Live	Planted on boundary
40.	<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	'Govalmuda'	Small shrub	Live	Planted on boundary
41.	<i>Justicia betonica</i> L.	Acanthaceae	'Sanna aadusoge'	Scandent shrub	Live	Planted on boundary
42.	<i>Justicia gendarussa</i> Burm.f.	Acanthaceae	'Vatamkolli'	Under shrub	Live	Planted on boundary
43.	* <i>Lantana camara</i> L.	Verbenaceae	'Kaadugulabi'	Rambling shrub	Dried/Live	Mechanical barrier
44.	<i>Leea indica</i> (Burm.f.) Merr.	Leeaceae	'Nedil'	Large shrub	Live	Planted on boundary
45.	* <i>Mucuna pruriens</i> (L.) DC.	Papilionaceae	'Naayi sonang'	Twining herb	Live	Prevents entry
46.	<i>Naringi crenulata</i> (Roxb.) Nicolson	Rutaceae	'Kadukanchi'	Spinous tree	Dried	Mechanical barrier
47.	<i>Ochlandra scriptoria</i> (Dennst.) C.Fischer	Poaceae	'Vaate bidiru'	Shrubby bamboo	Live/Dried	Mechanical barrier
48.	<i>Ochlandra travancorica</i> Benth.ex.Gamble	Poaceae	'Vaate bidiru'	Shrubby bamboo	Live/Dried	Mechanical barrier
49.	<i>Opuntia stricta</i> (Haw.) Haw. var. <i>dillenii</i> (Ker-Gawler)L. Benson	Cactaceae	'Papaasukalli'	Flat shrub	Live	Prevents entry
50.	<i>Pandanus fascicularis</i> Lam.	Pandanaceae	'Kedage'	Large shrub	Live	Prevents entry
51.	<i>Pandanus kaida</i> Kurz.	Pandanaceae	'Kaadukedage'	Large shrub	Live	Prevents entry
52.	<i>Pandanus unipapillatus</i> Denst.	Pandanaceae	'Mundangi'	Large shrub	Live	Prevents entry
53.	<i>Pedilanthus tithymaloides</i> (L.) Poit.	Euphorbiaceae	'Mandeli croton'	Succulent herb	Live	Prevents entry
54.	<i>Petalidium barlerioides</i> (Roth.) Nees.	Acanthaceae	'Basavanapada'	Large shrub	Live	Planted on boundary
55.	<i>Phyllanthus myrtifolius</i>	Euphorbiaceae		Under shrub	Live	Planted on boundary
56.	<i>Plumeria rubra</i> L.	Apocynaceae	'Gosampige'	Small tree	Live	Planted on boundary

57.	<i>Pseudoxytenanthera stocksii</i> (Munro.) Naithani	Poaceae	'Gandubidiru'	Slender bamboo	Live	Planted on boundary
58.	<i>Scleropyrum pentandrum</i> (Dennst.) Mabblerley	Santalaceae	'Naaikuli'	Small armed tree	Dried / Live	Mechanical barrier
59.	<i>Securinea leucopyrus</i> (Willd.) Muell.-Arg.	Euphorbiaceae	'Kurambaral'	Straggling shrub	Dried	Mechanical barrier
60.	<i>Terminalia travancorensis</i> Wight & Arn.	Combretaceae	'Kattukadukka'	Large tree	Live	Planted on boundary
61.	<i>Thunbergia erecta</i> (Benth.) T.Anders.	Acanthaceae	'Krishna-hoo'	Erect shrub	Live	Planted on boundary
62.	<i>Vitex negundo</i> L.	Verbenaceae	'Lakki', 'Nekki'	Large shrub	Live	Planted on boundary
63.	<i>Vitex trifolia</i> L.	Verbenaceae	'Karpura nekki'	Stout shrub	Live	Planted on boundary
64.	<i>Ziziphus glaberrima</i> (Sedgw.) Sant.	Rhamnaceae	'Kottakka'	Small tree	Dried	Mechanical barrier
65.	<i>Ziziphus mauritiana</i> Lam.	Rhamnaceae	'Bugari'	Small tree with drooping branches	Dried	Mechanical barrier
66.	<i>Ziziphus oenoplia</i> Mill.	Rhamnaceae	'Choori mullu'	Scandent shrub	Dried	Mechanical barrier
67.	<i>Ziziphus rugosa</i> Lam.	Rhamnaceae	'Kotte mullu'	Scrambling shrub	Dried	Mechanical barrier

Discussion

On comparison with plants used for field fencing in North Gujarat (Bhasker L Punjani, 1998), it is clear that only 10 plants (indicated by*) are used both in Gujarat and Kerala for fencing. Sacred groves form the best example for plant conservation through belief while National Parks and sanctuaries for conservation through law. These traditional fences also help a lot in the conservation of many plants with spines and those forming impenetrable thickets, only because of their role in field fencing, otherwise by the time most of them might have disappeared from this universe. Moreover the large trees planted along the boundary act as wind breakers, thereby reducing the rate of evaporation from the field and barren land formation. Thus these traditional fences are time tested, easily affordable, easy to construct and play an important role in the conservation of many plants.

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