



## ESTABLISHMENT OF AN ARBORETUM OF RARE AND CHARACTERISTIC SPECIES OF THE MOIST DECIDUOUS FORESTS OF KERALA

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## ABSTRACT OF THE PROJECT PROPOSAL

- 1. Project No.** : KPRI 402/03
- 2. Title** : **Establishment of an Arboretum of rare and characteristic species of moist deciduous forests of Kerala**
- 3. Objectives**
- i. To collect propagules of about 100 species of rare and characteristic species of moist deciduous forests of Kerala and establish the nursery.
  - ii. Out plant the seedlings raised in the Arboretum plot and monitor their survival and growth.
  - iii. To organize the Arboretum with name boards, plot charts, etc. and to prepare a Handbook on the Arboretum
- 4. Principal Investigator** : K. K. N. Nair
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- 5. Date of commencement** : April 2003
- 6. Scheduled date of completion** : March 2009
- 7. Funding agency** : Plan Funds

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## *Abstract*

The Arboretum was established in the main campus of Kerala Forest Research Institute at Peechi, in an area of about five hectares. The area is covered by moist deciduous forests represented by 34 species and 726 individual trees. By supplementing the existing stand by filling tree gaps present, the live-collection was organized. In order to systematically organise the Arboretum, initially, the plot was demarcated into grids of 25 x 25 m size and the positions of all the existing trees were marked and gaps for planting were identified. Seeds of different arborescent species were collected from the moist deciduous forests of the State along with those of a few endemic species from the adjoining semi evergreen, evergreen and dry deciduous forests. The collected seeds were germinated in the nursery at the Field Research Station of the Institute at Velupadam in Thrissur District, with the details generated on germination percentage of most of them. When the seedlings attained suitable size, they were planted in the Arboretum plot, in the tree gaps already identified, at a spacing of 3 to 4 metres, depending on the availability of space and known growth habit of the species being introduced. The positions of the newly planted seedlings were marked in the grid maps and both existing and newly added species were accessioned and labeled. The labels include details like botanical name, common synonym(s), family names, local names, source locality from where new collections were made and date of planting, which are also repeated in the species enumeration part of the Handbook. The Handbook also gives botanical details of the species and the height growth of the seedlings in the Arboretum plot, since their planting. The Arboretum is maintained with necessary causality replacements, and weeding and watering, whenever required. The present holding of the Arboretum is 3089<sup>8</sup> accessions belonging to 170 species under 50 families and 122 genera, with about 50 taxa endemic to southern Peninsular India. Arboretum is maintained with the details mentioned above and the grid maps with markings on the location details of each of the live collection. The Arboretum also has the Index Seminum ID No. 1518 and is also enlisted in the National Network of Botanical Gardens in India.



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## 1. Introduction

Arboretum is primarily a live collection of woody plants, often incorporating species of a particular group of plants or characteristic and rare taxa of a specific area or ecosystem, which are of conservation importance. Obviously, they will be predominantly live collections of tree species with additions of lianas or woody climbers and woody shrubs. Such systematically organised live collections serve as a conservatory of the species included and will provide material and data for various scientific studies apart from facilitating educational, ornamental and recreation purposes. Renowned examples of such arboreta *vis-à-vis* botanical gardens are Kew Gardens in London, Arnold Arboretum in Boston, Massachusettes, Holden Arboretum in Ohio, United States, Missouri Botanic Garden in United States, and so on. In India, full fledged botanical gardens, well represented in tree species, are Indian Botanic Garden, Howrah, West Bengal and National Botanic Garden, Lucknow, Uttar Pradesh. Such live collections of trees and other economically important plant groups are also being established in Kerala State like the ones organised by the Tropical Botanical Garden and Research Institute, Thiruvananthapuram and the Malabar Botanic Garden in Malappuram District. Kerala Forest Research Institute, Peechi, Thrissur District, Kerala State, has also successfully established an Arboretum containing 170 species of trees and other woody plants with a total of 3089 accessions. The species included in the KFRI Arboretum are mostly characteristic and rare species of the moist deciduous forests of the State along few rare and endemic species of the adjoining forest types, namely semi-evergreen, dry deciduous and evergreen forests. The Arboretum was established during 2003-08 and is being maintained and developed.

### 1.1. Moist deciduous forests of Kerala

As the arboretum of KFRI is mainly intended to include the arborescent species of the moist deciduous forests of Kerala, a brief introductory information on the forest type in the State is given here. In Kerala, almost 43.50 per cent of the total forest area is covered by this forest type. In distribution, the forest type is occurring adjacent to human habitations and is therefore subjected to much degradation, both in quality and species content. The forest type is also the ecosystem where forest plantations of teak are established. In the content of non-wood forest produce plants, and especially the medicinal plants as dealt with by Nair (1997), moist deciduous forests of the State are very rich. Because of the same reason, several species of the forest type are excessively exploited in the past leading to rarity of many of them, and this is one of the reasons for establishing the Arboretum. Added to this are factors like encroachments,

Grazing, fire, removal of litter, etc. which impoverish the forest type, both in quality and content. The species content of the forest type is generally documented in Floras like Hooker (1872-95) and Gamble (1915-36), and more specifically, by Champion and Seth (1968). The forest type is dominated by species like *Tectona grandis*, *Dillenia pentagyna*, *Terminalia paniculata*, *Pterocarpus marsupium*, *Tetrameles nudiflora*, *Dalbergia sissooides*, *Lagerstroemia microcarpa*, *Anogeissus latifolia*, and so on. There is no clear stratification in the forest type as



Fig. 1. General view of the Arboretum



Fig. 2. Natural stands in the Arboretum

deviating from the evergreen forests. Shrubby plants and other ground flora are also quite rich in the forest type when compared to the evergreen and semi evergreen forests which share its boundary.

## 1.2. Arboretum plot in KFRI Campus

The Arboretum of Kerala Forest Research Institute was established in the Peechi Campus of the Institute during 2003-08 in an area of about 5 hectares. The area is in the North-West part of the Institute campus. The flora of the moist deciduous forest area in the main campus of the Institute is well documented by Nair, *et al.* (1997). The area lies between 10° 31' North latitude and 76° 24' East longitude in the Peechi Forest Range of Thrissur District and Forest Division (Figs. 1, 2). The campus extends to 28.17 ha of which 5 ha area where existing flora is minimum is converted into the Arboretum (Fig. 3). Typical moist deciduous species like *Tectona grandis*, *Xylia xylocarpa*, *Grewia tiliifolia*, *Cleistanthus collinus*, *Miliusa tomentosa*, *Dillenia pentagyna*, *Pterocarpus marsupium* and *Haldina cordifolia* are naturally distributed in the 5 hectare Arboretum plot. The open areas in the plot were used for planting of additional species to organize the Arboretum. The plot is of undulating terrain with an altitudinal variation of 8-10 m and is with sheet rock to the extend of about 10 x 5 m apart



from smaller rocky outcrops, here and there. The area is fully within the enclosure of compound wall of the campus with fencing on the southern part. There are also two staff quarters with in the Arboretum plot.

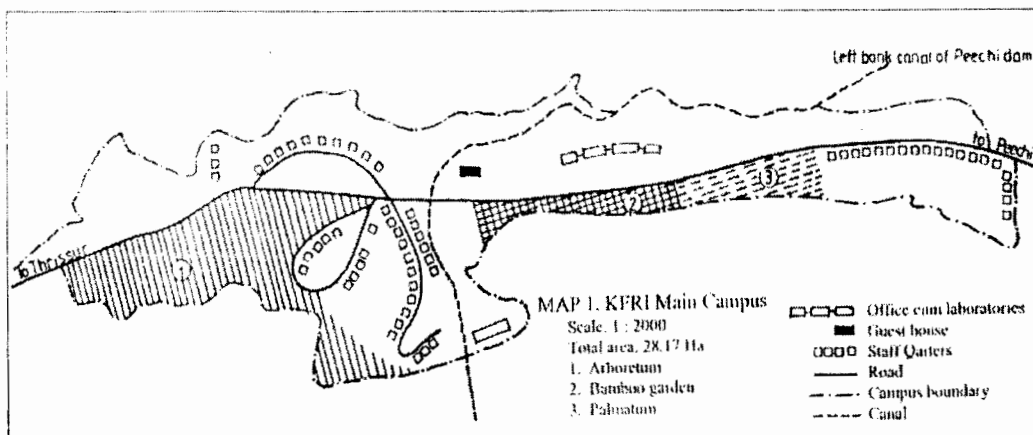


Fig. 3. Map of the Arboretum plot and adjacent areas in KFRI Pechi Campus

## 2. Establishment of the Arboretum

The Arboretum was established mainly to assemble the characteristic and rare species of the moist deciduous forests of Kerala which covers an area of about 43.5 per cent of the total 9400 km<sup>2</sup> forest area of the State. In fact, the five hectare area in the main campus of the Institute, where the arboretum is established itself is a moist deciduous forest area in the central part of Kerala. Because of that, the species introduced into this area can survive and flourish very well as it is situated in the same agro climatic conditions under which the plants are distributed in their natural habitat. As moist deciduous forest of the State are very rich in angiosperm species of both wood and non-wood utility and as they are very close to the human habitations, they are getting degraded day by day both in extent and in species content. Therefore, there is every likelihood that more and more component species of the forest type will become rare and endangered in the future. It is in this context that an attempt was made to organize a live collection of the more characteristic and rare woody species of the forest type in the form of an Arboretum at one place with proper protection and support by a research organization with forestry background. In future, the Arboretum will be of high importance in the context of species conservation and ecosystem protection. More over, such a scientifically organized live collection of woody species in their original habitat can serve as a reservoir of material and data required for several purposes related to research, forest conservation, nature education, demonstration, and so on. Also, the facility will serve as a major source of seeds and plant

materials of more than 170 characteristic and rare species of the moist deciduous forests of Kerala.

### 2.1. Details of the Arboretum plot

The Arboretum was established in the main campus of the Institute at Peechi. The plot of the arboretum extends to an area of more than 5 ha, maintained by the Institute as a forest ecosystem, well protected by boundary wall or barbed wire fencing. The area is along the Peechi-Thrissur road side, in between the Institute buildings and the Kannara road junction. As natural stands, the plot contained about 34 arborescent species with a total population of 726 individuals. As the area was sparsely vegetated, there was enough tree gaps available to plant more woody species and organize the Arboretum, leaving the rocky outgrowth of about 50 m<sup>2</sup> at one place. The terrain of the arboretum is gently slopping from the road side towards the North with an altitudinal variation of 8-10 m. There is also a marshy area at the bottom portion of the plot which could accommodate species suited to such habitats in the natural forest. The most common tree species which existed in the plot are *Xylia xylocapa*, *Pterocarpus marsupium*, *Tectona grandis*, *Grewia tiliifolia*, *Miliusa tomentosa*, *Terminalia paniculata*, *Terminalia crenulata*, etc. The ground flora was constituted by species such as *Rauvolfia tetraphylla*, *Cyclea peltata*, *Ichnocarpus frutescens*, and so on, which during summer perish, where ever there is no shade of trees. *Cycas circinalis* and *Tectona grandis* out number all other species of the natural strands in the plot.

### 2.2. Organisation of the Arboretum

In order to systematically introduce maximum number of species into the Arboretum, initially the area was divided in to 25 x 25 m grids (Fig. 4), which were mapped and demarcated using concrete stumps of 30 cm height above ground. All the standing trees in the plot were identified and their positions marked in the grid map. By this exercise tree gaps in the plot, where the additional seedlings can be planted could be identified. The grid maps of the area were incorporated into the computer with marking of all existing trees in various grids. This grid map formed the basis of the dynamic database, organized later for the Arboretum with the details of each additions incorporated into each of the grids. Separate marks for the existing (E) and newly planted (N) species (Appendix II), were incorporated in to the grid map. The details of both existing and added species in various grids are also given as two tables below each grid map with species wise details on their number of individuals available in each of the grid.





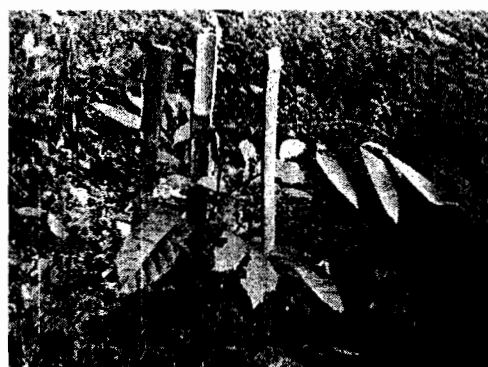
crops. The poly-potted seedlings with labels were planted and maintained in the plot with specific accession number for each. Details of survival and growth of the field-planted seedlings were recorded at 6 monthly intervals. Casualties were also replaced from time to time, either with the same species or with additional species in order to increase the overall species content of the Arboretum. On an average, 10-25 seedlings of each species were planted in the plot, depending on the availability of seedlings. The grids in which different accessions are available were also noted for incorporation in the species-wise data sheet and their spatial details were plotted in the grid maps, both given in the Handbook.

#### **2.4. Labeling of accessions and organization of the database**

As and when the seedlings planted were established, all the existing and planted seedlings were labeled with metallic boards welded to iron rods of 1.5 m height, so that they can serve as permanent labels for individual stands in the Arboretum. Accession number, botanical name, family name, local name(s) and planting date (s) are provided in the labels for all the planted individual stands in the arboretum and for existing stands in the plot (Figs. 5, 6). The position of all existing trees and newly planted seedlings, casualties replaced, etc. were plotted in the 25 x 25 m grid maps of the Arboretum with little peripheral areas where the plot boundaries are



**Fig. 5. View of the Arboretum**



**Fig. 6. A seedling in the Arboretum**

irregular. There are 80 such grids for the total 5 ha area of the Arboretum. Details of species content of each quadrat are given separately for the existing and newly planted stands and their total number in each of the quadrat. All the quadrat maps are also given as Appendix II in the Handbook with two such maps on each page. A dynamic data base with details like species name, family name, habit, source locality, accession numbers, quadrates in which they available, habit, leaf inflorescence, flower and seeds characteristics, flowering and fruiting timings, germination and growth rates, is also organized in the computer.

## 2.4. Species content and their taxonomic details

At present, there are 170 taxa of woody species in the arboretum. They belong to one gymnosperm and 169 angiosperm species. Among the angiosperms, 162 taxa are dicotyledons belonging to 118 genera and 47 families. Monocotyledons are represented by 7 species of 3

Table 1. Details of species representation in the Arboretum

<i>Plant groups</i>	<i>No. of Families</i>	<i>No. of Genera</i>	<i>No. of Species</i>
Gymnosperms	1	1	1
Dicotyledons	47	118	162
Monocotyledons	2	3	7

genera and 2 families (Table 1). Among the total 170 species in the Arboretum, 49 species are southern Peninsular Indian endemics, as listed here. Photographs of selected endemics are also given in Appendix I.

### Southern Peninsular Indian endemic species represented in the Arboretum

1. *Actinodaphne malabarica* Balakr.
2. *Aglaia barberi* Gamble
3. *Aglaia lawii* (Wt.) Saldahna
4. *Alstonia venenata* R. Br.
5. *Archidendron monadelphum* (Roxb.) Neilson
6. *Artocarpus hirsutus* Lamk.
7. *Baccaurea courtallesiensis* (Wt.) Muell.-Arg.
8. *Beilschmiedia wightii* (Nees) Benth.
9. *Calamus travancoricus* Bedd. ex Becc. et Hook.f.
10. *Calamus vattayila* Renuka
11. *Calophyllum calaba* Linn.
12. *Cinnamomum malabattrum* (Burm.f.) Bl.
13. *Cordia wallichii* G. Don
14. *Diospyros bourdillonii* Brandis
15. *Diospyros paniculata* Dalz.
16. *Dipterocarpus bourdillonii* Brandis
17. *Dipterocarpus indicus* Bedd.

18. *Dysoxylum malabaricum* Bedd. ex Hiern
19. *Ficus dalhousiae* Miq.
20. *Flacourtia montana* Grah.
21. *Garcinia gummi-gutta* (Linn.) Robs.
22. *Gluta travancorica* Bedd.
23. *Holigarna arnottiana* Hook. f.
24. *Hopea parviflora* Bedd.
25. *Hopea racophloea* Dyer
26. *Humboldtia bourdillonii* Prain
27. *Humboldtia vahliana* Wt.
28. *Hydnocarpus pentandra* (Buch.-Ham.) Oken
29. *Ixora brachiata* Roxb. ex DC.
30. *Kingiodendron pinnatum* (Roxb.) Harms.
31. *Lagerstroemia microcarpa* Wt.
32. *Litsea coriacea* (Heyne ex Meisner) Hook. f.
33. *Mastixia arborea* (Wt.) Bedd.
34. *Mitragyna tubulosa* (Arn.) Hav.
35. *Myristica beddomei* King
36. *Myristica fatua* Houtt.
37. *Nothopegia colebrookeana* (Wt.) Bl.
38. *Otonephelium stipulaceum* (Bedd.) Radlk.
39. *Palaquium ellipticum* (Dalz.) Baill.
40. *Polyalthia fragrans* (Dalz.) Bedd.
41. *Radermachera xylocarpa* (Roxb.) K. Schum.
42. *Semecarpus auriculata* Bedd.
43. *Semecarpus travancorica* Bedd.
44. *Syzygium palghatense* Gamble
45. *Syzygium travancoricum* Gamble
46. *Terminalia paniculata* Roth
47. *Vateria indica* Linn.
48. *Vateria macrocarpa* B. L. Gupta
49. *Xanthophyllum arnottianum* Wt.



All the species in the Arboretum are alphabetically enumerated in the Handbook as per their up to date botanical names. In the individual species data sheet, apart from the botanical name, basionym if any, synonym(s), local name(s), source locality(s), date of planting, accession number(s) as KFRI-AB series and quadrats in which they are represented are given as the first part. In the second part of the data sheet, plant details like habit, leaf, flower, fruit, seed and phenological characters of each species are given. Also, observed or details gathered from various sources on the germination and growth rates of various species are given to facilitate their artificial regeneration in future as part of the live collection or plantation establishment. Even though the area of the Arboretum is limited to 5 ha and most of the gaps are filled with species additions, there is still scope for introducing 20-30 species to enrich the live collection. The Arboretum has also been recognized internationally with the Index Seminum ID No. 1518 and is also enlisted in the National Network of Botanical Gardens in India.

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## **4. Species Enumeration**

<b>1. <i>Acacia ferruginea</i> DC.</b>		
<b>Family</b>	<b>Mimosaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Mimosa ferruginea</i> (DC.) Roxb.	
<b>Local name(s)</b>	Karivela	
<b>Distribution</b>	Peninsular India, Sri Lanka	
<b>Source locality(s)</b>	Chinnar (Idukki)	
<b>Date(s) of planting</b>	23.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3389 to KFRI-AB 3397	
<b>Quadrant number(s)</b>	52	
<b>Description</b>	<b>Habit</b>	Trees, up to 9-12 m high with rough, deeply fissured bark and glabrous branchlets, armed with prickles or unarmed.
	<b>Leaves</b>	Bipinnate, with stipular spines, 5-10 cm long; leaflets 10-20 pairs, 0.8-1x.05-.08 cm, linear, oblong, unequal sided, glaucous above, glabrous beneath, subcoriaceous, oblique at base, obtuse at apex.
	<b>Flowers</b>	Pale yellow, sessile, in slender, 5-10 cm long, axillary spikes with caudaceous bracts and bracteoles.
	<b>Fruits and seeds</b>	Pods 8-18 x 1-2 cm, flat, thin, brown, reticulately veined, glabrous, indehiscent; seeds 4 - 8, ovate, flat.
<b>Flowers and fruits</b>	January - March; November - February	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 135 cm with in a period of 2.5 years.	

<b>2. <i>Acacia leucophloea</i> (Roxb.) Willd.</b>		
<b>Family</b>	<b>Mimosaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Mimosa leucophloea</i> Roxb.	
<b>Local name(s)</b>	Vellavela	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Chinnar (Idukki)	
<b>Date(s) of planting</b>	23.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3449 to KFRI-AB 3454; KFRI-AB 3456 to KFRI-AB 3473	
<b>Quadrant number(s)</b>	51, 60, 62, 69	
<b>Description</b>	<b>Habit</b>	Trees, up to 12 m high with bark yellowish, rough, exfoliating as irregular scales; spreading branches, pubescent when young.
	<b>Leaves</b>	Bipinnate, with stipular spines; leaflets 12-30 pairs, 0.5-0.1 x 0.2-0.3 cm, crowded, subsessile, linear oblong, glabrous or subglabrous, oblique at base, subacute at apex.
	<b>Flowers</b>	Creamy white in terminal, tomentose panicles of numerous globose heads; with zig zag peduncle.
	<b>Fruits and seeds</b>	Pods pale brown, 8-15 cm long, sessile, thin, flat, slightly curved, tomentose, indehiscent; seeds dark brown, smooth, irregularly elliptical, shining.
<b>Flowers and fruits</b>	January - March; April - June or February - March	
<b>Notes</b>	Seeds germinate by about 42 per cent. Field-planted seedlings attain an average height of 108 cm with in a period of 2.5 years.	

<b>3. <i>Acacia mellifera</i> Benth.</b>		
<b>Family</b>	<b>Mimosaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Mimosa mellifera</i> Vahl	
<b>Local name(s)</b>	Nil	
<b>Distribution</b>	Native of Sudan, introduced in tropics	
<b>Source locality(s)</b>	Palappily (Thrissur)	
<b>Date(s) of planting</b>	28.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3160 to KFRI-AB 3162; KFRI-AB 3164 to KFRI-AB 3168	
<b>Quadrat number(s)</b>	51, 52	
<b>Description</b>	<b>Habit</b>	Armed trees, up to 5-8 m high with a pair of short, black, recurved intra-stipular prickles on the branchlets.
	<b>Leaves</b>	Bi or tripinnate; leaflets 0.2- 0.5 x .02-0.4 cm, obliquely obovate-oblong, obtuse, oblique at base, round at apex.
	<b>Flowers</b>	White, fragrant, in cylindrical, elongate racemes.
	<b>Fruits and seeds</b>	Pods pale brown, dehiscent, flat, rounded or acuminate at apex; seeds 2-8, flat with hard testa.
<b>Flowers and fruits</b>	January - March; April - June	
<b>Notes</b>	Seeds germinate by about 60 per cent. Field-planted seedlings attain an average height of 90 cm with in a period of 2.5 years.	

<b>4. <i>Acacia nilotica</i> (L.) Willd. ex Del.</b>		
<b>Family</b>	<b>Mimosaceae</b>	
<b>Basionym/synonym</b>	<i>Mimosa nilotica</i> L.; <i>A. arabica sensu</i> Hook.f.	
<b>Local name(s)</b>	Karuvellam	
<b>Distribution</b>	Native of upper India, West Asia and Africa, introduced in Peninsular India	
<b>Source locality(s)</b>	Chinnar (Idukki)	
<b>Date(s) of planting</b>	02.06.2004	
<b>Accession number(s)</b>	KFRI-AB 1753 to KFRI-AB 1759; KFRI-AB 1762; KFRI-AB 1764 to KFRI-AB 1772	
<b>Quadrat number(s)</b>	48, 65	
<b>Description</b>	<b>Habit</b>	Trees up to 7 m high or sometimes straggling shrubs; young branches green, pubescent and spiny, with stipular spines, almost conical, 2-3 cm long; bark longitudinally fissured.
	<b>Leaves</b>	Bipinnate, 4 -5.9 cm long, with 3-7 pinnate; leaflets 18-25 pairs, 0.2-0.5 x 0.1-0.2 cm, narrowly oblong, sessile, glabrous, oblique at base, obtuse at apex.
	<b>Flowers</b>	Golden yellow, sessile, fragrant, in axillary peduncled, globose heads, up to 1.3 cm in diameter.
	<b>Fruits and seeds</b>	Pods, 7.6-15.2 x 1.2-1.5 cm, stipulate, greyish-green, moniliform, densely grey-tomentose, sub-indehiscent; seeds dark, shining, ovoid, compressed.
<b>Flowers and fruits</b>	Irregular (June - July); April - June	
<b>Notes</b>	Seeds germinate by about 60 per cent. Field-planted seedlings attain an average height of about 65 cm with in a period of 3.5 years.	

<b>5. <i>Actinodaphne malabarica</i> Balakr.</b>		
<b>Family</b>	<b>Lauraceae</b>	
<b>Basionym/synonym(s)</b>	<i>Actinodaphne hirsuta</i> Hook. f.; <i>A. hookeri</i> sensu Bedd.	
<b>Local name(s)</b>	Kambilivirinji, Malavirinji, Neyaram	
<b>Distribution</b>	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Sholayar (Thrissur)	
<b>Date(s) of planting</b>	26.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2913; KFRI-AB 2925 to KFRI-AB 2927; KFRI-AB 2929 to KFRI-AB 2937	
<b>Quadrant number(s)</b>	6, 7, 10, 11	
<b>Description</b>	<b>Habit</b>	Trees, 5-18 m high with dark grey, smooth, brownish, streaked bark; young shoots densely tomentose.
	<b>Leaves</b>	Simple in two whorls of 3 each, 8-16 x 3.5-5.5 cm, elliptic-lanceolate, coriaceous, glabrous above, tomentose beneath, acute at base, finely acuminate at apex.
	<b>Flowers</b>	Yellowish, unisexual in fascicles from bare branches; male in clusters of less than 8; female in umbellate or subracemose clusters on stout and short peduncles.
	<b>Fruits and seeds</b>	Berries red, up to 1.2 cm long, ellipsoid, seated on cup-shaped enlarged perianth tube; seed one with thin testa.
<b>Flowers and fruits</b>	August - January	
<b>Notes</b>	Field-planted seedlings attain an average height of 280 cm within a period of 3.5 years.	

<b>6. <i>Adenanthera pavonina</i> L.</b>		
<b>Family</b>	<b>Mimosaceae</b>	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Manchadi	
<b>Distribution</b>	South Asia, China	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	04.06.2004	
<b>Accession number(s)</b>	KFRI-AB 1842 to KFRI-AB 1863	
<b>Quadrant number(s)</b>	44, 45	
<b>Description</b>	<b>Habit</b>	Trees, 18-24 m high and 2-2.4 m in girth with grey or straw coloured, smooth, bark and glabrous light green branchlets.
	<b>Leaves</b>	Bipinnate, glabrescent; leaflets 5-8 per pinnae, 1-4.5 x 0.4-3 cm, dark green, elliptic oblong, rounded or broadly cuneate at the base, rounded or emarginate at the base.
	<b>Flowers</b>	White turning yellowish, fragrant, almost 0.4 cm long clustered in axillary glabrous, racemes.
	<b>Fruits and seeds</b>	Pods usually bright scarlet, rarely yellowish-brown, 15-25 x 1.5-2 cm, linear, strap-shaped, curved; seeds 8-15 per pod, scarlet-red, discoid.
<b>Flowers and fruits</b>	March - May; some times in September - October	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 526 cm within a period of 3.5 years.	

<b>7. <i>Aegle marmelos</i> (L.) Corr.</b>		
<b>Family</b>	<b>Rutaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Limonia monophylla</i> L.; <i>Atalantia malabarica</i> Rafin.; <i>A. floribunda</i> Wt.	
<b>Local name(s)</b>	Koovalam	
<b>Distribution</b>	India, Sri Lanka, Malesia	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	02.06.2004	
<b>Accession number(s)</b>	KFRI-AB 1727 to KFRI-AB 1731; KFRI-AB 1733 to KFRI-AB 1737; KFRI-AB 1740 to KFRI-AB 1752	
<b>Quadrant number(s)</b>	56, 65	
<b>Description</b>	<b>Habit</b>	Armed trees, 4-6 m high with strong 1-2 cm long, sharp axillary thornes; branchlets brownish or reddish green when young, aromatic.
	<b>Leaves</b>	Imparipinnate, 3 or rarely 5-foliolate; leaflets 3-6.5 x 1.5-3 cm, the terminal leaflet the largest, lanceolate or elliptic-lanceolate, entire, glabrous, oblique or obtuse at base, obtusely acuminate or obtuse at apex.
	<b>Flowers</b>	Greenish white, fragrant, up to 2 cm long in axillary panicles.
	<b>Fruits and seeds</b>	Berries grey or yellowish, woody, 4.5-10 cm in diameter, globose with orange-coloured thick pulp; seeds numerous embedded in the pulp, oblong, compressed.
<b>Flowers and fruits</b>	April - May	
<b>Notes</b>	Seeds germinate by about 56 per cent. Field-planted seedlings attain an average height of 147 cm with in a period of 3.5 years.	

<b>8. <i>Aglaia barberi</i> Gamble</b>		
<b>Family</b>	<b>Meliaceae</b>	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Karakil	
<b>Distribution</b>	Peninsular India in the Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	17.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3049 to KFRI-AB 3062; KFRI-AB 3066 to KFRI-AB 3068	
<b>Quadrant number(s)</b>	30, 31, 45	
<b>Description</b>	<b>Habit</b>	Trees with smooth, reddish-brown bark and reddish-brown tomentose young shoots.
	<b>Leaves</b>	Imparipinnate; leaflets 5-7, up to 14 x 3 cm, lanceolate, glabrous above and glabrescent below, entire, acuminate at apex, acute or obtuse at base.
	<b>Flowers</b>	Yellow, dioecious; male flowers in panicles from the axils of upper leaves; female flowers in few flowered racemes of about 4 cm length.
	<b>Fruits and seeds</b>	Berries, globose, up to 3 cm across, sometimes depressed at apex; seeds 1-3, covered with white, mucilaginous aril.
<b>Flowers and fruits</b>	January - June	
<b>Notes</b>	Seeds germinate by about 70 per cent. Field-planted seedlings attain an average height of 119 cm with in a period of 2.5 years.	



<b>9. <i>Aglaia lawii</i> (Wt.) Saldahna</b>		
<b>Family</b>	<b>Meliaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Nimmonia lawii</i> Wt.; <i>Amoora lawii</i> (Wt.) Bedd.; <i>A. canarana</i> (Turcz.) Hiern	
<b>Local name(s)</b>	Vellacheeralam	
<b>Distribution</b>	Peninsular India in the Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Dhoni (Palakkad)	
<b>Date(s) of planting</b>	28.06.2005	
<b>Accession number (s)</b>	KFRI-AB 3029 to KFRI-AB 3046	
<b>Quadrant number(s)</b>	26, 31, 42	
<b>Description</b>	<b>Habit</b>	Trees, 6-11 m high with young branches lepidotod with yellowish brown scales, glabrous when mature.
	<b>Leaves</b>	Imparipinnate, 12-20 cm long; leaflets 1-2 pairs, 4-9.5 x 2-4 cm, elliptic or oblong-lanceolate, glabrous, entire, rounded or acute at base, acuminate at apex.
	<b>Flowers</b>	White in axillary panicles with yellowish brown scales; females and bisexuals in spikes; males in panicles.
	<b>Fruits and seeds</b>	Capsules buff-coloured, pyriform, up to 2 cm long, densely lepidot, 3-4 loculed with one seed in each locule; seeds covered by fleshy integument.
<b>Flowers and fruits</b>	December - June	
<b>Notes</b>	The seeds germinate by 70-75 per cent. Field-planted seedlings attain an average height of 88 cm with in a period of 2.5 years.	

<b>10. <i>Ailanthus triphysa</i> (Dennst.) Alston</b>		
<b>Family</b>	<b>Simaroubaceae</b>	
<b>Basionym/synonym(s)</b>	<i>A. malabarica</i> DC.	
<b>Local name(s)</b>	Matti, Pongalliyam, Perumaram	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Natural stand and planted ; Peechi (Thrissur)	
<b>Date(s) of planting</b>	27.06.2005	
<b>Accession number(s)</b>	KFRI-AB-797 to 799; KFRI-AB 2963; KFRI-AB 2965; KFRI-AB 2966; KFRI-AB 2968 to KFRI-AB 2974; KFRI-AB 2976; KFRI-AB 2978 to KFRI-AB 2987.	
<b>Quadrant number(s)</b>	22, 43, 62, 70	
<b>Description</b>	<b>Habit</b>	Trees 20-40 m high with smooth, pale white bark and cylindrical straight trunk less branched towards base.
	<b>Leaves</b>	Paripinnate, 40-60 cm long; leaflets 7-12 x 2.5-2 cm, ovate-oblong, entire, glabrous, unequal at base, acute or acuminate at apex.
	<b>Flowers</b>	White in axillary panicles with 5-fid calyx, 5 petals, 10 stamens in the male and 2-5 partite ovary in the female flowers.
	<b>Fruits and seeds</b>	Samaras reddish brown, 4.5-5.5 x 1-2 cm, linear oblong, rounded at both ends or very rarely twisted; seed one in the middle.
<b>Flowers and fruits</b>	February - March	
<b>Notes</b>	Seeds germinate by about 50-70 per cent. Field-planted seedlings attain an average growth of 143 cm with in a period of 5 years.	

<b>11. <i>Alangium salvifolium</i> (L.f.) Wang.</b>		
<b>Family</b>	<b>Alangiaceae</b>	
<b>Basionym/synonym(s)</b>	<i>A. lamarckii</i> Thw.; <i>Grewia salvifolia</i> L. f.	
<b>Local name(s)</b>	Ankolam	
<b>Distribution</b>	India, Sri Lanka, China, Vietnam, Thailand, Africa	
<b>Source locality(s)</b>	Dhoni (Palakkad)	
<b>Date(s) of planting</b>	22.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2265 to KFRI-AB 2277; KFRI-AB 2279 to KFRI-AB 2289	
<b>Quadrat number(s)</b>	9, 10	
<b>Description</b>	<b>Habit</b>	Deciduous trees up to 9 m high and up to 1.2 m girth with greyish brown bark, spiny branches and pubescent terminal shoots.
	<b>Leaves</b>	Simple, 4.5 -12.5 x 2-5 cm, oblong or ovate-lanceolate, entire, pinnate, glabrous above, pubescent along the nerves below, rounded or acute at base, acuminate or subobtuse at apex.
	<b>Flowers</b>	White, fragrant, subsilky in axillary cymes or fascicles.
	<b>Fruits and seeds</b>	Berry purplish red, up to 2 cm long, ovoid, ellipsoid or almost globular, crowned with calyx lobes, one seeded; seeds oblong with thin testa and fleshy albumin.
<b>Flowers and fruits</b>	February - April; May - June	
<b>Notes</b>	Field-planted seedlings attain an average height of 189 cm with in a period of 2.5 years.	

<b>12. <i>Albizia amara</i> Boiv.</b>		
<b>Family</b>	<b>Mimosaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Mimosa amara</i> Roxb.	
<b>Local name(s)</b>	Varacchi	
<b>Distribution</b>	India, Sri Lanka	
<b>Source locality(s)</b>	Chinnar (Idukki)	
<b>Date(s) of planting</b>	02.06.2004; 03.06.2004	
<b>Accession number(s)</b>	KFRI-AB 1720 to KFRI-AB 1724; KFRI-AB 1773 to KFRI-AB 1791.	
<b>Quadrat number(s)</b>	48, 57, 76	
<b>Description</b>	<b>Habit</b>	Trees, 6-8 m high with young shoots yellowish-grey pubescent and thin, rough, scaly bark.
	<b>Leaves</b>	Bipinnate, up to 10 cm long, densely pubescent; leaflets 10-30 pairs, sessile, up to 3.8 x 0.1-2 mm, linear-oblong, green and glabrous above, glaucous and more or less pubescent beneath, oblique at base, obtuse or subacute at apex.
	<b>Flowers</b>	Yellow, bisexual, fragrant, subsessile in 12-20 flowered heads with peduncles solitary or in fascicles of 2-4 in the axils of upper leaves.
	<b>Fruits and seeds</b>	Pods 6.5-16.5 x 1.5-2.5 cm, stalked, thin, flat, abruptly pointed, slightly transversely veined; seeds 6-8, ovoid, flat.
<b>Flowers and fruits</b>	April - June	
<b>Notes</b>	Seeds germinate by about 83 per cent. Field-planted seedlings attain an average height of 298 cm with in a period of 3.5 years.	

<b>13. <i>Albizia lebbbeck</i> (L.) Willd.</b>		
<b>Family</b>	<b>Mimosaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Mimosa lebbbeck</i> L.	
<b>Local name(s)</b>	Vaaka, Karivaaka, Nenmenivaka	
<b>Distribution</b>	South Asia, South China	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	17.11.2003; 19.11.2003	
<b>Accession number(s)</b>	KFRI-AB 1252 to KFRI-AB 1254; KFRI-AB 1256 to KFRI-AB 1261; KFRI-AB 1263 to KFRI-AB 1265; KFRI-AB 1345 to KFRI-AB 1349; KFRI-AB 1351; KFRI-AB 3685 to KFRI-AB 3686	
<b>Quadrat number(s)</b>	29, 30, 34, 35	
<b>Description</b>	<b>Habit</b>	Trees, up to about 18 m high with glabrous young shoots and rough, deeply fissured, exfoliating bark.
	<b>Leaves</b>	Bipinnate, 8-23 cm long; leaflets 3-9 pairs, 2-7.5 x 1-2.5 cm, varying in size, obliquely oblong, round or cuneate at base, obtuse at apex.
	<b>Flowers</b>	Greenish white, fragrant, in 5-10 cm long, pedunculate heads, solitary or in fascicles of 2-4, arising from axils of upper leaves.
	<b>Fruits and seeds</b>	Pods, thin, flat, 15-30 x 2.5-5 cm, strap-shaped, rounded at both ends reticulate veined; seeds ovate or oblong, pale brown.
<b>Flowers and fruits</b>	March - May; August - October	
<b>Notes</b>	Seeds germinate by about 60-90 per cent. Field-planted seedlings attain an average height of 296cm with in a period of 4.5 years.	

<b>14. <i>Albizia odoratissima</i> (L.f.) Benth.</b>		
<b>Family</b>	<b>Mimosaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Mimosa odoratissima</i> L.f.	
<b>Local name(s)</b>	Kunni-vaka	
<b>Distribution</b>	India, Sri Lanka	
<b>Source locality(s)</b>	Natural stand and planted; Peechi (Thrissur)	
<b>Date(s) of planting</b>	19.11.2003	
<b>Accession number(s)</b>	KFRI-AB783 to KFRI-AB 785; KFRI-AB 1352 to KFRI-AB 1354; KFRI-AB 1356 to KFRI-AB 1369; KFRI-AB 1371	
<b>Quadrat number(s)</b>	34, 35, 40	
<b>Description</b>	<b>Habit</b>	Trees, 25-30 m high with dark-coloured, flaking bark and pubescent young shoots.
	<b>Leaves</b>	Bipinnate, 10-28 cm long; leaflets 8-15 pairs, sessile, 1.5-2.5 cm long, obliquely oblong, glaucous beneath, obliquely rounded at base and apex.
	<b>Flowers</b>	White, fragrant, sessile in 10-12 flowered globose heads with peduncles solitary or 2-4 together in terminal panicles.
	<b>Fruits and seeds</b>	Pods, reddish brown, reticulate veined, 8-16 x 2-3 cm, thin, flat, stalked; seeds yellow 8-12, broadly ovate, flattened.
<b>Flowers and fruits</b>	April - January	
<b>Notes</b>	Seeds germinate by about 47 per cent. Field-planted seedlings attain an average height of 279 cm with in a period of 4.5 years.	

**15. *Allophylus cobbe* (L.) Raesch.**

<b>Family</b>	<b>Sapindaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Rhus cobbe</i> L.; <i>Schmidelia rheedei</i> Wt.	
<b>Local name(s)</b>	Mukkannanpezhu	
<b>Distribution</b>	Peninsular India, Sri Lanka, South-East Asia	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	22.12.2005	
<b>Accession number(s)</b>	KFRI-AB 3655 to KFRI-AB 3659	
<b>Quadrat number(s)</b>	76	
<b>Description</b>	<b>Habit</b>	Stunted trees or shrubs, 3-5 m high with ferruginous tomentose branchlets.
	<b>Leaves</b>	Tri-foliolate, up to 14 cm long; leaflets up to 16 x 7.5 cm, ovate or elliptic, serrate-dentate, hairy or pubescent on both sides, acute, rounded or oblique at base, acuminate at apex.
	<b>Flowers</b>	White, shortly pedicelled in fascicles along the branches of axillary, spicate, 2-4 branched racemes.
	<b>Fruits and seeds</b>	Berries red, indehiscent, globose, fleshy, smooth, 1-2 lobed; seeds large, erect with short fleshy aril.
<b>Flowers and fruits</b>	May - August	
<b>Notes</b>	Field-planted seedlings attain an average height of 138 cm with in a period of 2.5 years.	

**16. *Alstonia scholaris* (L.) R. Br.**

<b>Family</b>	<b>Apocynaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Echites scholaris</i> L.	
<b>Local name(s)</b>	Ezhilampala	
<b>Distribution</b>	South and South-East Asia, Australia	
<b>Source locality(s)</b>	Natural stand and planted; Peechi (Thrissur)	
<b>Date(s) of planting</b>	28.05.2004	
<b>Accession number(s)</b>	KFRI- AB 745 to KFRI- AB 753; KFRI - AB 1588 to KFRI- AB 1602	
<b>Quadrat number(s)</b>	2, 23, 26, 36, 68, 51, 41, 69, 76, 78	
<b>Description</b>	<b>Habit</b>	Trees, up to 30 m high and about 2.4 m in girth, often buttressed at base with greyish brown, cracked bark containing milky latex and whorled branchlets.
	<b>Leaves</b>	Simple, 4-10 in whorls, 5-23 x 2.5-6.5 cm, oblanceolate to obovate, entire, glabrous, pale beneath, cuneate at base, acute or retuse at apex.
	<b>Flowers</b>	Greenish white, 0.8-1.3 cm in diameter, in terminal compact, umbellately branched, pubescent panicles of racemose cymes.
	<b>Fruits and seeds</b>	Follicles slender, pendulous, up to 0.6 - 0.7 m long, terete, narrowed at both ends; seeds almost 0.8 cm long, flattened, oblong, with a tuft of brownish hairs.
<b>Flowers and fruits</b>	February - August	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 358 cm with in a period of 3.5 years.	

<b>17. <i>Alstonia venenata</i> R. Br.</b>		
<b>Family</b>	Apocynaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Perumarunnu, Theeppala	
<b>Distribution</b>	Peninsular India ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Chinnar (Idukki)	
<b>Date(s) of planting</b>	23.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2440 to 2448; KFRI-AB 2450 to KFRI-AB 2452; KFRI-AB 2454 to KFRI-AB 2458; KFRI-AB 2460 to KFRI-AB 2464	
<b>Quadrant number(s)</b>	38, 43	
<b>Description</b>	<b>Habit</b>	Shrubs or stunted trees, 2-3 m high with thin, light brown bark milky and glabrous young parts.
	<b>Leaves</b>	Simple, 3-6 in whorls, 9.5-17.5 x 2-6 cm, oblong-lanceolate, membranous, entire, glabrous, tapering at base, finely acuminate at apex.
	<b>Flowers</b>	White in terminal subumbellate, pedunculate cymes with racemose terminal branches.
	<b>Fruits and seeds</b>	Follicles up to 12 cm long, stalked, falcately curved, tapering at both ends, beaked, striate; seeds linear oblong, flat, tufted hairy at both ends.
<b>Flowers and fruits</b>	February - August.	
<b>Notes</b>	Field-planted seedlings attain an average height of 129.8 cm with in a period of 2.5 years.	

<b>18. <i>Antiaris toxicaria</i> (Pers.) Lesch.</b>		
<b>Family</b>	Moraceae	
<b>Basionym/synonym(s)</b>	<i>A. saccidora</i> Dalz.; <i>A. innoxia</i> Bl.	
<b>Local name(s)</b>	Arayanjili, Maravuri	
<b>Distribution</b>	Peninsular India, Sri Lanka.	
<b>Source locality(s)</b>	Chimmoni (Thrissur)	
<b>Date(s) of planting</b>	27.05.2004; 25.06.2005	
<b>Accession number(s)</b>	KFRI-AB 1506 to KFRI-AB 1509; KFRI-AB 2780 to KFRI-AB 2800	
<b>Quadrant number(s)</b>	75, 36, 41	
<b>Description</b>	<b>Habit</b>	Trees, 30-40 m high with buttressed trunk up to 1 m diameter, 1-1.5 cm thick, greyish white bark and spreading terminal branches.
	<b>Leaves</b>	Simple, 6.5-14.5 x 2.5-5 cm, elliptic oblong, entire or serrulate, shiny above, glabrous, rounded, subcordate or truncate at base, acute or mucronate at apex.
	<b>Flowers</b>	Greenish on axillary/peduncles; male flowers crowded on pedunculate receptacles; females flowers minute, solitary, enclosed in subsessile, velvety, involucre of bracts.
	<b>Fruits and seeds</b>	Drapes red-crimson, up to 2.5 cm length, pyriform or subglobose; seeds 1-1.5 cm long with crustaceous, hard testa and thin endocarp.
<b>Flowers and fruits</b>	September - October; January - May.	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 391cm with in a period of 3. 5 years.	

<b>19. <i>Aphanamixis polystachya</i> (Wall.) Parker</b>		
<b>Family</b>	Meliaceae	
<b>Basionym/synonym(s)</b>	<i>Aglaiia polystachya</i> Wall.; <i>Amoora rohituka</i> Wt. et Arn.	
<b>Local name(s)</b>	Chemmaram, Vallikkonna	
<b>Distribution</b>	Indian subcontinent	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	27.05.2004, 26.08.2004, 27.08.2004	
<b>Accession number(s)</b>	KFRI-AB 1534 to KFRI-AB 1554; KFRI-AB 3670 to KFRI-AB 3672	
<b>Quadrant number(s)</b>	75, 40	
<b>Description</b>		Trees, up to 12 m high with brown bark, fine silky young parts and trunk straight with drooping branches.
	<b>Leaves</b>	Imparipinnate, up to 90 cm long, with 4-8 pairs of opposite and one odd leaflet; smallest leaflet 6-12x3.5-6 cm, elliptic-oblong or lanceolate, glabrous, obtuse or acute at base, acuminate at apex.
	<b>Flowers</b>	Dull white, polygamo-dioecious; male flowers in solitary, axillary panicles; female flowers in axillary or superaxillary drooping spikes, larger than the male flowers.
	<b>Fruits and seeds</b>	Capsules yellow, 2-3.8 cm in diameter, subglobose, 3-loculed and 3-valved; seeds oblong, oblique with deep orange or scarlet aril.
<b>Flowers and fruits</b>	July - November; January - June	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 259 cm with in a period of 3.5 years.	

<b>20. <i>Aporosa lindleyana</i> (Wt.) Baill.</b>		
<b>Family</b>	Euphorbiaceae	
<b>Basionym/synonym(s)</b>	<i>Scepa lindleyana</i> Wt.	
<b>Local name(s)</b>	Vetti, Ponvetti, Aechil	
<b>Distribution</b>	Peninsular India, Sri Lanka	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	21.06.2005; 31.01.2006	
<b>Accession number(s)</b>	KFRI-AB 2078 to KFRI-AB 2102; KFRI-AB-3737 to KFRI-AB 3741	
<b>Quadrant number(s)</b>	16, 17, 18, 21, 22, 27, 33, 38	
<b>Description</b>	<b>Habit</b>	Trees, 4-8 m high with thin, shallowly fissured, greyish brown bark and terete, glabrous branchlets.
	<b>Leaves</b>	Simple, bifariate, 6-14 x 3-6 cm, elliptic-oblong, glabrous, almost entire, coriaceous, acute or rounded at base, acuminate at apex.
	<b>Flowers</b>	Yellowish-white, dioecious; male flowers minute, sessile, in 2-3.5 cm long, dense spikes; female flowers, pale green on very short, hairy, clustered racemes.
	<b>Fruits and seeds</b>	Capsules, yellow, less than 1 cm in diameter, globose, 2-4 valved, pointed and orange yellow aril; seeds brown, oblong plano-convex.
<b>Flowers and fruits</b>	December - June	
<b>Notes</b>	Field-planted seedlings attain an average height of 190 cm with in a period of 2.5 years.	

### 21. *Archidendron monadelphum* (Roxb.) Nielson

<b>Family</b>	<b>Mimosaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Mimosa monadelpha</i> Roxb.; <i>Pithecellobium bigeminum sensu</i> Baker	
<b>Local name(s)</b>	Kattukonna, Pannivaka	
<b>Distribution</b>	South-West and eastern Himalayas	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	16.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3617 to KFRI-AB 3641	
<b>Quadrant number(s)</b>	17, 18	
<b>Description</b>	<b>Habit</b>	Trees, 8-12m high with young parts glabrous or slightly pubescent and reddish brown bark.
	<b>Leaves</b>	Bipinnate, 8-12 cm long glabrous with 3 pairs of pinnae; leaflets 1-2 or rarely 3 pairs, 6-12 x 2-2.5 cm, elliptic-lanceolate or obovate-oblong, glabrous above, pubescent beneath when young, acute at base, acuminate or acute at apex.
	<b>Flowers</b>	Pale yellow or cream-coloured, subsessile, in few-flowered heads on long branches of pubescent panicles, shorter than the leaves.
	<b>Fruits and seeds</b>	Pods reddish brown outside and bright red within, flat, spiral, glabrous or nearly so; seeds 5-8, orbicular, compressed.
<b>Flowers and fruits</b>	January - February	
<b>Notes</b>	Field-planted seedlings attain an average height of 225cm with in a period of 2.5 years.	

### 22. *Artocarpus heterophyllus* Lamk.

<b>Family</b>	<b>Moraceae</b>	
<b>Basionym/synonym(s)</b>	<i>A. integrifolius sensu</i> Wt.	
<b>Local name(s)</b>	Pilavu, Plavu	
<b>Distribution</b>	Peninsular India, Sri Lanka; widely cultivated	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	26.08.2004	
<b>Accession number(s)</b>	KFRI-AB 809; KFRI-AB 1060 to KFRI-AB 1064; KFRI-AB 1313 to KFRI-AB 1318; KFRI-AB 1372 & KFRI-AB 1373; KFRI-AB 1951 to KFRI-AB 1952.	
<b>Quadrant number(s)</b>	12, 34, 35, 40, 80	
<b>Description</b>	<b>Habit</b>	Trees 10-20 m high with glabrous branches, bark blackish grey mottled, exfoliating as thin flakes and having milky, sticky latex.
	<b>Leaves</b>	Simple, 8-18 x 4.5-8 cm, elliptic or obovate, entire or slightly lobbed, dark green and shiny above, rough beneath, narrowed at base, acuminate at apex.
	<b>Flowers</b>	Yellowish green, unisexual, minute, in spikes enclosed by spathe like bracts; male catkins on young branches; female catkins crowded on globose or oblong, cauline receptacles.
	<b>Fruits and seeds</b>	Sorosis echinate, 25-50 x 15-30 cm, hanging on short stalks; seeds 2-3 cm long, oblong or reniform.
<b>Flowers and fruits</b>	November - January	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 436 cm in a period of 3.5 years.	



<b>23. <i>Artocarpus hirsutus</i> Lamk.</b>		
<b>Family</b>	Moraceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Aanjili, Aanjili-plavu, Ayani	
<b>Distribution</b>	Peninsular India in the Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Natural stand and planted; Peechi (Thrissur)	
<b>Date(s) of planting</b>	18.11.2003	
<b>Accession number(s)</b>	KFRI-AB 1305 to KFRI-AB 1306; KFRI-AB 1308 to KFRI-AB 1312; KFRI-AB 1374 to 1380; KFRI-AB 1726; KFRI-AB 1953 & KFRI-AB 1955	
<b>Quadrat number(s)</b>	35,40,41	
<b>Description</b>	<b>Habit</b>	Trees up to 40 m high; bark 1-1.5 cm thick, dull grey-brown, exfoliating as thin, smooth flakes and with milky sticky exudation.
	<b>Leaves</b>	Simple, 12-20 x 6-15 cm, broadly ovate or elliptic, coriaceous, entire, narrowed at base, subacute at apex.
	<b>Flowers</b>	Yellowish green, unisexual, minute, in axillary pedunculate receptacles with male receptacles narrowly cylindrical and pendulous and female flowers with tubular perianth confluent below with the receptacle.
	<b>Fruits and seeds</b>	Sorosis yellow when ripe, echinate with spines up to 0.5 cm long, cylindrical, straight, hispid; seeds white, 1.2-2 cm long, ovoid or oblong-globose, smooth.
<b>Flowers and fruits</b>	January- February; May - July	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field- planted seedlings attain an average height of 353 cm with in a period of 4.5 years.	

<b>24. <i>Azadirachta indica</i> A. Juss.</b>		
<b>Family</b>	Meliaceae	
<b>Basionym/synonym(s)</b>	<i>Melia azadirachta</i> L.; <i>Melia indica</i> Brandis	
<b>Local name(s)</b>	Aaryaveppu, Veppu	
<b>Distribution</b>	South Asia	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	22.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2153 to KFRI-AB 2177; KFRI-AB 3673 to KFRI-AB 3675	
<b>Quadrat number(s)</b>	32, 33	
<b>Description</b>	<b>Habit</b>	Trees, 15-25 m high with bright green dense foliage; bark greyish brown, vertically striated with red, sticky exudation.
	<b>Leaves</b>	Imparipinnate; leaflets 2-8 x 1-3 cm, generally with the terminal leaflet obliquely lanceolate, coarsely serrate, bright green and shining above, oblique at base, acuminate at apex.
	<b>Flowers</b>	White, fragrant, shortly pedicelled, in axillary, many flowered panicles, shorter than leaves.
	<b>Fruits and seeds</b>	Drupes yellowish green, 1.2-1.8 cm long, ovoid-oblong, smooth, with 1-2 (usually one) seeds; seeds with a brown papery testa.
<b>Flowers and fruits</b>	January - March; June - August	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field- planted seedlings attain an average height of 200 cm with in a period of 3.5 years.	

<b>25. <i>Baccaurea courtallensis</i> (Wt.) Muell.-Arg.</b>		
<b>Family</b>	<b>Euphorbiaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Pierardia courtallensis</i> Wt.; <i>Baccaurea sapida</i> Bedd.	
<b>Local name(s)</b>	Moottikaya, Mootilpazham, Mootilthoori	
<b>Distribution</b>	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Chimmoni (Thrissur)	
<b>Date(s) of planting</b>	23.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3364 to KFRI-AB 3388	
<b>Quadrat number(s)</b>	67	
<b>Description</b>	<b>Habit</b>	Trees, 4-8 m high with rough, greyish yellow bark, bole uneven with tubercles, minutely pubescent young parts and dense crown.
	<b>Leaves</b>	Simple, often clustered towards the tip of the branchlets, 6-16 x 2.5-7.5 cm, elliptic, glabrous, entire, acute at base, shortly acuminate at apex.
	<b>Flowers</b>	Dark crimson, dioecious in densely clustered slender racemes on old stem; male flowers with 4-8 stamens; female flowers with 2-5 loculed ovary.
	<b>Fruits and seeds</b>	Capsules, bright crimson when ripe, up to 2.5 cm in diameter, subglobous, rough, with 3 prominent ridges from apex to base; seeds 3, enclosed in succulent aril.
<b>Flowers and fruits</b>	December - July	
<b>Notes</b>	Field-planted seedlings attain an average height of 160 cm within a period of 2.5 years.	

<b>26. <i>Bambusa bambos</i> (L.) Voss</b>		
<b>Family</b>	<b>Poaceae</b>	
<b>Basionym/synonym(s)</b>	<i>B. arundinacea</i> (Retz.) Willd.	
<b>Local name(s)</b>	Mula, Pattil	
<b>Distribution</b>	India, Sri Lanka	
<b>Source locality(s)</b>	Natural stand	
<b>Date(s) of planting</b>	Not planted	
<b>Accession number(s)</b>	KFRI-AB 682	
<b>Quadrat number(s)</b>	54	
<b>Description</b>	<b>Habit</b>	Armed, tufted bamboo, 20-30 m high with prominent nodes bearing sharp spines and striate, orange yellow streaked stem sheaths.
	<b>Leaves</b>	Simple, up to 16 x 2.5 cm, linear or linear lanceolate, glabrous or puberulous beneath, scabrous along the margins, rounded at base, stiff and pointed at apex.
	<b>Flowers</b>	Spikelets yellowish green, in large panicles with branchlets bearing them in loose clusters; floral glumes 3-7, the upper 1-3 male or neuter.
	<b>Fruits and seeds</b>	Caryopsis 0.3-0.5 cm long, oblong, grooved on one side, beaked by stilar base at apex.
<b>Flowers and fruits</b>	Eratoc, once in the life cycle.	
<b>Notes</b>	Seeds germinate by about 50 per cent; the bamboo can be raised by cuttings, rhizomes and by offset planting.	

<b>27. <i>Barringtonia acutangula</i> (L.) Gaertn.</b>		
<b>Family</b>	<b>Lecythidaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Eugenia acutangula</i> L.	
<b>Local name(s)</b>	Attupezhu	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Parambikulam (Palakad)	
<b>Date(s) of planting</b>	28.12.2006	
<b>Accession number(s)</b>	KFRI-AB 1760, KFRI-AB 1758, KFRI-AB1070, KFRI-AB 2946, KFRI-AB 3035, KFRI-AB 2527.	
<b>Quadrat number(s)</b>	5, 21, 35, 42, 65, 73	
<b>Description</b>	<b>Habit</b>	Evergreen trees upto 15m high, bark 10-12 mm thick, dark brown, rough; branchlets densely tomentose.
	<b>Leaves</b>	Simple, clustered towards the tip of branchlets; 7-8 x 2.5-7 cm, oblanceolate, obovate or elliptic-obovate, serrate, glabrous, subcoriaceous, cuneate or attenuate at base, round or subacute at apex.
	<b>Flowers</b>	Bisexual, red, fragrant, in terminal pendulous many flowered racemes, 10-12 cm long; rachis glabrous, not sacculant.
	<b>Fruits and seeds</b>	Berry, fibrous, 2.5-3.8 cm long, quadrangular, equally narrowed towards each end, oblong-ovoid; seed one, ovoid.
<b>Flowers and fruits</b>	March - May	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 37 cm with in a period of 1 year.	

<b>28. <i>Bauhinia malabarica</i> Roxb.</b>		
<b>Family</b>	<b>Caesalpiniaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Piliostigma malabaricum</i> (Roxb.) Benth.	
<b>Local name(s)</b>	Arapuli	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	22.06.2005	
<b>Accession number (s)</b>	KFRI-AB 2250, KFRI-AB 2255, KFRI-AB 2257	
<b>Quadrat number(s)</b>	73, 67	
<b>Description</b>	<b>Habit</b>	Stunted small to medium sized trees, 3-5 m high with blackish, furrowed, rough bark and spreading branches.
	<b>Leaves</b>	Simple, broader than long, 3-12 x 3.5-13.5 cm, terminally divided into two rounded lobes, glabrous above, pubescent beneath, cordate at base, obtuse at apex.
	<b>Flowers</b>	Creamy white, almost 2 cm long, in dense axillary, sessile racemes with brown tomentose calyx, 10 free stamens and stipitate ovary.
	<b>Fruits and seeds</b>	Pods stalked, up to 30 cm long, almost straight, turgid, glabrous, reticulately veined with 20-30 seeds; seeds dark brown, ovoid.
<b>Flowers and fruits</b>	October - November	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 490 cm with in the period of 4.5 years.	

**29. Bauhinia purpurea L.**

<b>Family</b>	Caesalpiaceae	
<b>Basionym/synonym(s)</b>	<i>Phanera purpurea</i> (L.) Benth.	
<b>Local name(s)</b>	Kattu-mandaram	
<b>Distribution</b>	South and South-East Asia	
<b>Source locality(s)</b>	Dhoni (Palakkad)	
<b>Date(s) of planting</b>	14.11.2003; 01.06.2004; 25.08.2004	
<b>Accession number(s)</b>	KFRI -AB 1096 to KFRI -AB 1098; KFRI -AB 1101 to KFRI - AB 1103; KFRI-AB 1106 to KFRI -AB 1109; KFRI - AB 1668 to KFRI -AB 1677; KFRI -AB 1910 to KFRI -AB 1916	
<b>Quadrant number(s)</b>	12, 16, 64, 71, 79	
<b>Description</b>	<b>Habit</b>	Trees, 10-15 m high and 0.9-1.2 m in girth with greyish-brown bark and glabrous branchlets.
	<b>Leaves</b>	Simple, bilobed, 7.5-15 x 7-14 cm, usually longer than broad, entire, glabrous above, puberulent beneath, often cordate at base with 9-11 basal nerves, obtuse at apex.
	<b>Flowers</b>	Rose-purple or lilac coloured, fragrant in few-flowered, terminal, racemose panicles.
	<b>Fruits and seeds</b>	Pods 15-30 x 1.5-2.4 cm, linear, flat, pointed, dehiscent with 12-16 seeded; seeds dark brown, suborbicular.
<b>Flowers and fruits</b>	September - December; January - March.	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 489 cm with in a period of 4.5 years.	

**30. Bauhinia racemosa Lamk.**

<b>Family</b>	Caesalpiaceae	
<b>Basionym/synonym(s)</b>	<i>Piliostigma racemosa</i> (Lamk.) Benth.	
<b>Local name(s)</b>	Arampuli, Malayathi, Kotapuli	
<b>Distribution</b>	India, Sri Lanka	
<b>Source locality(s)</b>	Chinnar (Idukki)	
<b>Date(s) of planting</b>	22.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2225 to KFRI-AB 2249	
<b>Quadrant number(s)</b>	27,28,32	
<b>Description</b>	<b>Habit</b>	Trees, 4.5-7.5 m high with pale brown, thinly scaly bark and drooping branches.
	<b>Leaves</b>	Simple, 2 x 4.5 cm, broader than long, divided half way into two rounded lobes, glabrous above, white tomentose beneath, often cordate at base, obtuse at apex.
	<b>Flowers</b>	Creamy yellowish white, about 1.2 cm long, in terminal or leaf-opposed, 4-12 cm long racemes with densely pubescent rachis.
	<b>Fruits and seeds</b>	Pods 10-20 cm long, somewhat falcate, glabrous, turgid, tapering at base, blunt at apex, indehiscent with 12-20 seeds; seeds oblong, dark reddish brown or black, compressed.
<b>Flowers and fruits</b>	March - June; November - December	
<b>Notes</b>	Seeds germinate by with in a range of 27-90 per cent. Field-planted seedlings attain an average height of 133 cm with in a period of 4.5 years.	

<b>31. <i>Beilschmiedia wightii</i> (Nees) Benth.</b>		
<b>Family</b>	<b>Lauraceae</b>	
<b>Basionym/synonym(s)</b>	<i>Haasia wightii</i> Nees	
<b>Local name(s)</b>	Nagaramaram, Panthada	
<b>Distribution</b>	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Parambikulam (Palakad)	
<b>Date(s) of planting</b>	25.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3602 to KFRI-AB 3611; KFRI-AB 3613; KFRI-AB 3614; KFRI-AB 3615	
<b>Quadrant number(s)</b>	60, 59	
<b>Description</b>	<b>Habit</b>	Trees, 20-25m high with bark 0.5-0.8 cm thick, brown and smooth; branchlets glabrous.
	<b>Leaves</b>	Simple, 7.5-15x2-6.2 cm, elliptic, elliptic-oblong, elliptic - obovate, entire, glabrous, shining, acute at base, obtusely acuminate at apex.
	<b>Flowers</b>	Greenish yellow, in axillary and terminal glabrous, ebracteate panicles; peduncle and pedicel slender.
	<b>Fruits and seeds</b>	Berries purple, ovoid, smooth, 1.7-1.8 cm long; seed one with membranous testa.
<b>Flowers and fruits</b>	January - February	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 116 cm with in the period of 2.5 years.	

<b>32. <i>Bixa orellana</i> L.</b>		
<b>Family</b>	<b>Bixaceae</b>	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Kuppamanjal	
<b>Distribution</b>	Native of tropical America, widespread in tropics	
<b>Source locality(s)</b>	Dhoni (Palakkad)	
<b>Date(s) of planting</b>	26.05.2004	
<b>Accession number (s)</b>	KFRI-AB 1452	
<b>Quadrant number(s)</b>	71	
<b>Description</b>	<b>Habit</b>	Trees, up to 5 m high with yellow or red juicy bark.
	<b>Leaves</b>	Simple, 8-20 x 5-12 cm, ovate, entire, penninerved, glabrous, truncate or subcordate at base, acute or acuminate at apex.
	<b>Flowers</b>	White or pink, up to 5 cm in diameter, in terminal panicles. 8-50 flowered, scaly, sepals concave, petals unequal obovate.
	<b>Fruits and seeds</b>	Capsules, ovoid or subglobose, covered with long soft prickles, loculicidally 2-valved; seeds trigonous, rounded, grooved.
<b>Flowers and fruits</b>	August - September	
<b>Notes</b>	Field-planted seedlings attain an average height of 173cm with in a period of 3.5 years.	

### 33. *Bombax ceiba* L.

<b>Family</b>	<b>Bombacaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Bombax malabaricum</i> DC.; <i>Salmalia malabarica</i> (DC.) Schott <i>et</i> Endl.	
<b>Local name(s)</b>	Elavu, Ilavu, Mullilavu, Poola	
<b>Distribution</b>	Tropical Asia, New Guinea	
<b>Source locality(s)</b>	Natural stand	
<b>Date(s) of planting</b>	Not planted	
<b>Accession number (s)</b>	KFRI-AB 580, KFRI-AB 585 to KFRI-AB 596, KFRI-AB 603	
<b>Quadrant number(s)</b>	4, 20, 21, 23, 42, 59, 61, 62, 63, 66, 70	
<b>Description</b>	<b>Habit</b>	Armed trees, 30-40 m high with straight, buttressed trunk, bark covered with conical prickles and spreading branches in whorls.
	<b>Leaves</b>	Digitately compound; leaflets 6-17.5 cm long, lanceolate or ovate, entire, minutely puberulous or glabrous beneath, , attenuate or cuneate at base, caudate- acuminate at apex.
	<b>Flowers</b>	Bright red, solitary or 2-5 together, towards the tip of leaf less branchlets.
	<b>Fruits and seeds</b>	Capsules up to 12.5 cm long, ovoid, 5-valved, lined with white silky hairs; seeds numerous, smooth, dark brown, ovoid, embedded in the white cotton.
<b>Flowers and fruits</b>	January - April	
<b>Notes</b>	Seeds germinate by 60 -75 per cent. Field-planted seedlings attain an average height of 650 cm with in a period of 5 years.	

### 34. *Briedelia retusa* (L.) Spreng.

<b>Family</b>	<b>Euphorbiaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Briedelia airy-shawii</i> P. T. Li; <i>Chytia retusa</i> L.	
<b>Local name(s)</b>	Asuavamaram, Mulluvenga, Mullankkayini	
<b>Distribution</b>	Indo-Malaya	
<b>Source locality(s)</b>	Natural strand	
<b>Date(s) of planting</b>	Not planted	
<b>Accession number(s)</b>	KFRI-AB 794 to KFRI-AB 795	
<b>Quadrant number(s)</b>	75, 77	
<b>Description</b>	<b>Habit</b>	Trees, 8-12 m high, spinous when young with grey bark and thinly hairy branchlets.
	<b>Leaves</b>	Simple, 6-13.5 x 3-5 cm, elliptic-oblong, entire, slightly crenulate, bright green and glabrous above, tomentose beneath, rounded or rarely cordate at base, subacute or rounded at apex.
	<b>Flowers</b>	Greenish yellow, dioecious, sessile or shortly pediceled, crowded in dense axillary clusters or long axillary or terminal panicle spikes, often longer than the leaves.
	<b>Fruits and seeds</b>	Drupes purplish black, fleshy, less than 1 cm in diameter, globose, seated on persistent and enlarged calyx with 2 pyrenes or cocci; seed one in each pyrene, usually with fleshy or membranous albumin.
<b>Flowers and fruits</b>	August - December	
<b>Notes</b>	Seeds germinate by about 85 per cent. Field-planted seedlings attain an average height of 150 cm with in a period of 2.5 years.	

<b>35. <i>Caesalpinia coriaria</i> (Jacq.) Willd.</b>		
<b>Family</b>	Caesalpinaceae	
<b>Basionym/synonym(s)</b>	<i>Poinciana coriaria</i> Jacq.	
<b>Local name(s)</b>	Dividivi	
<b>Distribution</b>	Native of central and South America, introduced in the tropics	
<b>Source locality(s)</b>	Chalakydy (Thrissur)	
<b>Date(s) of planting</b>	18.11.2003	
<b>Accession number (s)</b>	KFRI-AB 1319 to KFRI-AB 1342	
<b>Quadrant number(s)</b>	34, 39	
<b>Description</b>	<b>Habit</b>	Stunted, trees, 4.5 - 10 m high with warty branchlets.
	<b>Leaves</b>	Bipinnate with 13-17 pinnate, up to 23 cm long; leaflets 12-20 pairs, rarely up to 30 pairs, 0.8-1 x 0.2-0.4 cm, oblong, entire, glabrous, oblique at base, obtuse at apex.
	<b>Flowers</b>	White or yellow, sweet-scented, 2.5 to 7.5 cm across, in short, dense, terminal panicles.
	<b>Fruits and seeds</b>	Pods brown to black, glabrous, devoid of prickles, 5.0 - 7.5 cm long, 1.8 cm broad, about 0.3 cm thick, spirally twisted on drying; seeds 8-12, dark brown, ovate - oblong, compressed.
<b>Flowers and fruits</b>	May - June; August - September	
<b>Notes</b>	Seeds germinate by about 80 per cent. Field-planted seedlings attain an average height of 246 cm with in a period of 4.5 years.	

<b>36. <i>Caesalpinia sappan</i> L.</b>		
<b>Family</b>	Caesalpinaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Chappangam	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Palappilly (Thrissur)	
<b>Date(s) of planting</b>	27.05.2004; 03.06.2004	
<b>Accession number (s)</b>	KFRI-AB 1560 to KFRI-AB 1572; KFRI-AB-1792 to KFRI-AB 1800.	
<b>Quadrant number(s)</b>	48, 75, 76, 78	
<b>Description</b>	<b>Habit</b>	Thorny straggling shrubs or trees, about 12 m high with scattered prickles on the stems or rarely unarmed.
	<b>Leaves</b>	Pinnate, up to 45 cm long with 8-12 pairs of 10-15 cm long pinnae; leaflets 10-20 pairs per pinnae, 1.2-1.9 x 1.0-1.5 cm, linear, elliptic oblong, minutely puberulous and dotted beneath, oblique or obtuse at base, obtuse at apex.
	<b>Flowers</b>	Yellow, about 1.3 cm long, in 30-40 cm long, in axillary or terminal rusty pubescent, racemose panicles.
	<b>Fruits and seeds</b>	Pods yellowish green turning blackish brown, glabrous, thick, flattened, woody, indehiscent, 3-4 seeded; seeds brown.
<b>Flowers and fruits</b>	August - October; December - February	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 511 cm with in a period of 4.5 years.	



<b>37. <i>Calamus prasinus</i> Lakshm. et Renuka</b>		
<b>Family</b>	Areaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Not known	
<b>Distribution</b>	India	
<b>Source locality(s)</b>	Mangalore (Karnataka); tissue cultured plants	
<b>Date(s) of planting</b>	07.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3513 to KFRI-AB 3514; KFRI-AB 3517 to KFRI-AB 3522	
<b>Quadrant number(s)</b>	19, 23	
<b>Description</b>	<b>Habit</b>	Solitary, rattans, 10-15 m high, stem with sheaths up to 3 cm in diameter; sheath pale green, spinose, upto 1 cm long.
	<b>Leaves</b>	Ecirrate, up to 2.5 m long including the petiole; leaflets 50 x 20 cm, terminal pair united basally, shiny green, 3- veined; veins ciliate on the upper half, cilia up to 1 cm long.
	<b>Flowers</b>	Inflorescence pendulous, tightly sheathing, 2 keeled, tip lacerate, spin, partial inflorescence to 18 cm long, secondary sheath unarmed, tubular.
	<b>Fruits and seeds</b>	Globose; scales in 26 rows, deeply channeled along the middle, yellow, shiny, bright green when young.
<b>Flowers and fruits</b>	November - December; May - June	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted plantlets attain an average height of 157 cm with in a period of 2.5 years.	

<b>38. <i>Calamus rotang</i> L.</b>		
<b>Family</b>	Areaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Arichooral, Cheru chooral	
<b>Distribution</b>	Western Ghats, Sri Lanka	
<b>Source locality(s)</b>	Achen kovil (Kollam); tissue cultured plants	
<b>Date(s) of planting</b>	07.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3499; KFRI-AB 3504 to KFRI-AB 3505; KFRI-AB 3509 to KFRI-AB 3512	
<b>Quadrant number(s)</b>	15,19	
<b>Description</b>	<b>Habit</b>	Armed, clustering, slender, climbing canes with stems 6-10m high, and internodes up to 45 cm long and 1-2 cm in diameter with sheath.
	<b>Leaves</b>	Pinnately compound, up to 80 cm long, spirally arranged on the stem with yellow spines up to 1 cm long; leaflets 35 x 2 cm, regular, long acuminate, spinous along the margins ciliate along the mid vein beyond mid portion beneath, bristled apex.
	<b>Flowers</b>	Pale greenish, dioecious in 3 cm long Inflorescence; male rachillae, up to 3 cm long, recurved; female rachillae up to 8 cm long with cup shaped involucre.
	<b>Fruits and seeds</b>	Light yellow, 1.1-2 cm long, ovoid, scales in 21 rows, faintly channeled along the middle portion; seeds flattened, 0.8 cm in diameter.
<b>Flowers and fruits</b>	September - October; March - May	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted plantlets attain an average height of 168 cm with in a period of 2.5 years.	

<b>39. <i>Calamus thwaitesii</i> Becc. et Hook.f.</b>		
<b>Family</b>	<b>Areaceae</b>	
<b>Basionym/synonym(s)</b>	<i>C. thwaitesii</i> Becc. et Hook f. var. <i>canaramus</i> Becc.; <i>C. longisetus</i> Thw.	
<b>Local name(s)</b>	Pannichural, Vandichooral, Thadiyanchooral	
<b>Distribution</b>	India, Sri Lanka	
<b>Source locality(s)</b>	Peechi (Thrissur); tissue cultured plants	
<b>Date(s) of planting</b>	07.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3493 to KFRI-AB 3497	
<b>Quadrat number(s)</b>	33	
<b>Description</b>	<b>Habit</b>	Robust, clustering and climbing canes, up to 20 m or more in length and about 6 cm in diameter with sheath.
	<b>Leaves</b>	Pinnately compound, up to 3 m long, densely armed with spines; leaflets numerous, usually grouped, the longest to 80 x 45 cm, sharply spinulose along the margins.
	<b>Flowers</b>	Dull white, in up to 6 m long inflorescence; male rachillae upto 8 cm long; female rachillae up to 15 cm long.
	<b>Fruits and seeds</b>	Yellowish brown with deep brown margins 2 x 1.3 cm ovoid, with scales; seed 1, almost 1.2 x 1.1 cm, suborbicular.
<b>Flowers and fruits</b>	November -January; February - May.	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 148 cm with in a period of 2.5 years.	

<b>40. <i>Calamus travancoricus</i> Bedd.</b>		
<b>Family</b>	<b>Areaceae</b>	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Arichural, Cheruchural, Vallichural	
<b>Distribution</b>	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Nilambur (Malappuram); tissue cultured plants	
<b>Date(s) of planting</b>	07.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3478; KFRI-AB 3481 to KFRI-AB 3492	
<b>Quadrat number(s)</b>	2	
<b>Description</b>	<b>Habit</b>	Slender clustering rattans with stems up to 10 m long and 0.8 cm in diameter including sheath; sheaths green, spiny with papery ocrea; spines up to .5cm long, slender.
	<b>Leaves</b>	Pinnately compound, up to 50 cm long; leaflets 20-30, in opposite groups of 2-5 leaflets in each group, narrowly oblanceolate, up to 18 x 1.5 cm at middle.
	<b>Flowers</b>	Dull white flagelliform, dioecious on slender branched inflorescence; male rachillae 0.7-0.8 cm long, delicate, sinuous, with 7-8 distichous flowers; female rachillae simple, zigzag, 12-15 mm long with 3-4 distinct female flowers on each side.
	<b>Fruits and seeds</b>	Light yellow with brown, globose, 0.8-1cm long with scales having deep brown margins; seeds 0.7-0.8 cm long, subspherical bearing a smooth ridge from basal point to hilum.
<b>Flowers and fruits</b>	October-November; May-June	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted platlets attain an average height of 139 cm with in a period of 2.5 years.	

#### 41. *Calamus vattayila* Renuka

<b>Family</b>	Areaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Vattayilayan, Ottaman	
<b>Distribution</b>	Peninsular India ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Nemmara (Palakkad); tissue cultured plants	
<b>Date(s) of planting</b>	07.06.2005	
<b>Accession number (s)</b>	KFRI-AB 3474 to KFRI-AB 3477	
<b>Quadrat number(s)</b>	28	
<b>Description</b>	<b>Habit</b>	Solitary, small diameter rattan with stems up to 30 m long, up to 2.5 cm thick; culm sheaths dark green, scattered spiny; spinners up to 2 cm long rarely pointing upwards.
	<b>Leaves</b>	Compound, up to 1 m long, ecirrate; leaflets alternate, 40 x 10 cm, elliptic, dark green, 6 veined, tips armed with short bristles.
	<b>Flowers</b>	Flowers dull white, dioecious in axillary sheathed inflorescence, female in heavy bunches, up to 1 m long; partial inflorescence upto 40 cm long, shorter upwards.
	<b>Fruits and seeds</b>	Fruits chestnut brown, 2.5 x 0.8 cm long, oblong with persistent style up to 0.4 cm long, scales in 27 rows, longer than broad and not channeled, 1-seeded, sculptured on one side, 1.5 x 0.8 cm, oblong.
<b>Flowers and fruits</b>	September - October; April - May	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted plantlets attain an average height of 129 cm with in a period of 2.5 years.	

#### 42. *Calophyllum calaba* L.

<b>Family</b>	Guttiferae	
<b>Basionym/synonym(s)</b>	<i>C. apetalum</i> Willd.; <i>C. decipiens</i> Wt.; <i>C. wightianum</i> Wall.	
<b>Local name(s)</b>	Aattupunna, Manjappunna, Valuzhavam	
<b>Distribution</b>	Peninsular India in the Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Chimmony (Thrissur)	
<b>Date(s) of planting</b>	23.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2290 to KFRI-AB 2295; KFRI-AB 2298 to KFRI-AB 24099, KFRI-AB 2401, KFRI-AB 2402; KFRI-AB 2404 to KFRI-AB 2408; KFRI-AB 2412 to KFRI-AB 2413	
<b>Quadrat number(s)</b>	4, 5, 41, 42	
<b>Description</b>	<b>Habit</b>	Trees, 6-8 m high with, rough, deeply fissured, yellowish bark and tetragonous, glabrous young shoot.
	<b>Leaves</b>	Simple, 5-7.5 x 2-3 cm, obovate-oblong, entire with nerves prominent on the lower side, cuneate at base, rounded at apex.
	<b>Flowers</b>	White, bisexual, in racemes from the upper axils with strongly veined sepals, numerous stamens and peltate stigma.
	<b>Fruits and seeds</b>	Drupes red to yellowish-orange when ripe, up to 1.5 cm long, ellipsoid, smooth, apiculate at apex; seeds pale brown.
<b>Flowers and fruits</b>	December - April	
<b>Notes</b>	Seeds germinate by about 75 per cent. Field-planted seedlings attain an average height of 70 cm with in a period of 2.5 years.	

<b>43. <i>Calophyllum inophyllum</i> L.</b>		
<b>Family</b>	<b>Guttiferae</b>	
<b>Basionym/synonym(s)</b>	<i>C. blumei</i> Wt.; <i>C. bintagor</i> Roxb.	
<b>Local name(s)</b>	Punna	
<b>Distribution</b>	Paleotropics	
<b>Source locality(s)</b>	Chimmony (Thrissur)	
<b>Date(s) of planting</b>	28.05.2004	
<b>Accession number(s)</b>	KFRI-AB 1603 to KFRI-AB1607; KFRI-AB 1608 to KFRI-AB 1611, KFRI-AB 1613, KFRI-AB 1614, KFRI-AB 1615, KFRI-AB 1616	
<b>Quadrat number(s)</b>	77, 78	
<b>Description</b>	<b>Habit</b>	Trees, 10-15 m high with cracked and fissured, grey bark, dense crown and twiggy, glabrous branchlets.
	<b>Leaves</b>	Simple, 6.5-16 x 6-9.5, broadly elliptic, thick dark green above with close parallel veins, waved along the margins, glabrous, rounded or cunnnate at base, retuse or obtuse at apex.
	<b>Flowers</b>	White, fragrant, polygamous, in lax few-flowered racemes forming axillary or terminal panicles.
	<b>Fruits and seeds</b>	Drupes yellowish brown, 2-2.5 cm diameter, globose, smooth with thick pericarp, indehiscent; seeds up to 1.5 cm across, rounded.
<b>Flowers and fruits</b>	February - June; March - July	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 170 cm with in a period of 3.5 years.	

<b>44. <i>Canarium strictum</i> Roxb.</b>		
<b>Family</b>	<b>Burseraceae</b>	
<b>Basionym/synonym(s)</b>	<i>C. resiniferum</i> Brace ex King	
<b>Local name(s)</b>	Karutha-kunthrikkam, Kunthrikkam, Kunthrikka-payin, Thelli, Viraka	
<b>Distribution</b>	Peninsular India ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Chimmony (Thrissur)	
<b>Date(s) of planting</b>	28.12.2006	
<b>Accession number (s)</b>	KFRI-AB-1176, KFRI-AB-1383, KFRI-AB-1208, KFRI-AB-2139, KFRI-AB-2141	
<b>Quadrat number(s)</b>	15,21,24,35	
<b>Description</b>	<b>Habit</b>	Buttressed trees, up to 30 m high with straight bole, thick, bark exuding brownish-black fluid; branchlets velvety-tomentose.
	<b>Leaves</b>	Imparipinnate with 3-5 pairs of leaflets; the terminal one, 10-20 x 4-10 cm, ovate or elliptic, entire or crenate-serrate, glabrous above, tomentose beneath, oblique, subcordate or obtuse at the base, acuminate at the apex.
	<b>Flowers</b>	Flowers creamy white in axillary panicles; male creamy white, up to 7 cm long; female yellow, up to 0.9 cm long.
	<b>Fruits and seeds</b>	Drupes, less than 4cm, ellipsoid or obovate, blunt at the base and apex; seeds 1-3 with membranous testa.
<b>Flowers and Fruits</b>	December - June	
<b>Notes</b>	Seeds germinate by about 51 per cent. Field-planted seedlings attain an average height of 36 cm with in a period of one year.	

<b>45. <i>Carallia brachiata</i> (Lour.) Merr.</b>		
<b>Family</b>	<b>Rhizophoraceae</b>	
<b>Basionym/synonym(s)</b>	<i>Diatoma brachiata</i> Lour.; <i>Caraliia integerrima</i> DC.	
<b>Local name(s)</b>	Vallabham, Vankana, Varrungu	
<b>Distribution</b>	Indo-Malesia, Australia	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	29.06.2005	
<b>Accession number (s)</b>	KFRI-AB 3300, KFRI-AB 3301	
<b>Quadrant number(s)</b>	31,46	
<b>Description</b>	<b>Habit</b>	Trees up to 24 m high with reddish brown, corky, furrowed lenticellate bark and glabrous branchlets.
	<b>Leaves</b>	Simple, 13-20 x 5.8 cm, broadly elliptic, thick, rather fleshy with stout petioles, entire, glabrous, attenuate or acute at base, acute or obtuse at apex.
	<b>Flowers</b>	Bisexual, creamy white, sessile, about 0.5 cm across, in axillary pedunculate cymes.
	<b>Fruits and seeds</b>	Berries 0.5-0.8 cm across, globose, fleshy, one-loculed; seed 1, subreniform, reddish brown, rough, fairly hard testa.
<b>Flowers and fruits</b>	December - April; April - June	
<b>Notes</b>	Seeds germinate by about 13 per cent. Field-planted seedlings attain an average height of 260 cm with in a period of 2.5 years.	

<b>46. <i>Caryota urens</i> L.</b>		
<b>Family</b>	<b>Arecaceae</b>	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Choondappana, Aanapana	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Natural strand	
<b>Date(s) of planting</b>	Not planted	
<b>Accession number (s)</b>	KFRI-AB 777, KFRI-AB 779- KFRI-AB 782; KFRI-AB 839-KFRI-AB842 842	
<b>Quadrant number(s)</b>	2, 30, 34, 51, 75	
<b>Description</b>	<b>Habit</b>	Palms 10-15 m high and 30-80 cm in diameter, with cylindrical, annulate, smooth, grey, shining, shallowly cracked trunk.
	<b>Leaves</b>	Bipinnate, up to 5 x 3.5 m long with primary divisions about 1.2 m long, arched and drooping; leaflets 8-15 cm long, cuneiform, irregularly serrate-toothed, oblique-truncate at base.
	<b>Flowers</b>	Spadix 2-2.5 m long with branches forming a dense tassel drooping from the stout, short peduncle; male flowers up to 1 cm long with about 40 stamens; female flowers with 3 staminodes and solitary erect ovule.
	<b>Fruits and seeds</b>	Drupes reddish, 1.5-2 cm in diameter with acrid stinging pericarp; seeds 1 or 2, erect with ruminant albumen.
<b>Flowers and fruits</b>	Throughout the year	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 260 cm with in a period of 2.5 years.	

<b>47. <i>Cassia fistula</i> L.</b>		
<b>Family</b>	<b>Caesalpiaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Cassia rhombifolia</i> Roxb.	
<b>Local name(s)</b>	Kanikonna, Konna	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Natural stand and planted, Peechi (Thrissur)	
<b>Date(s) of planting</b>	28.05.2004	
<b>Accession number (s)</b>	KFRI-AB 806; KFRI-AB 1573, KFRI-AB 1574, KFRI-AB 1576 to KFRI-AB 1587	
<b>Quadrat number(s)</b>	51, 77	
<b>Description</b>	<b>Habit</b>	Trees, 10-20 m high with straight trunk, smooth and pale yellowish bark and spreading branches.
	<b>Leaves</b>	Pinnate, 15-50cm long; leaflets 4-8 pairs, 4.5-12 x 3-7.5 cm, opposite, ovate or ovate-oblong, entire, glabrous above, silvery pubescent beneath when young, cuneate at base, acute at apex.
	<b>Flowers</b>	Bright yellow in lax, terminal or axillary, often drooping racemes, 15-40 cm long.
	<b>Fruits and seeds</b>	Pods brownish black, 30-60 cm long, cylindrical, almost straight, smooth, shining, indehiscent with numerous seeds; seeds immersed in dark coloured pulp.
<b>Flowers and fruits</b>	March - May	
<b>Notes</b>	Seeds germinate by about 20-60 per cent. Field-planted seedlings attain an average height of 172 cm with in a period of 3.5 years.	

<b>48. <i>Chukrasia tabularis</i> A. Juss.</b>		
<b>Family</b>	<b>Meliaceae</b>	
<b>Basionym/synonym(s)</b>	<i>C. velutina</i> Roem.	
<b>Local name(s)</b>	Chuvannakil	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Dhoni (Palakad)	
<b>Date(s) of planting</b>	21.06.2005	
<b>Accession number (s)</b>	KFRI-AB 2103 to KFRI-AB 2127	
<b>Quadrat number(s)</b>	25, 26	
<b>Description</b>	<b>Habit</b>	Trees, 15-20 m high, with flaking bark and lenticellate and glabrous young branches.
	<b>Leaves</b>	Abruptly pinnate, 20-40 cm long; leaflets 5-8 pairs, 5-12 x 2-6.5 cm, ovate or ovate-oblong, entire, glabrous above, velvety beneath, unequal at base, acute or acuminate at apex.
	<b>Flowers</b>	Yellowish white, in large spreading terminal panicles, shorter than the leaves.
	<b>Fruits and seeds</b>	Capsules up to 5 cm long, ovate or obovoid, woody, 3-5 valved; seeds numerous, thin, winged.
<b>Flowers and fruits</b>	March - April	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 315 cm in the period of 2.5 years.	

<b>49. <i>Cinnamomum malabattrum</i> (Burm.f.) Bl.</b>		
<b>Family</b>	Lauraceae	
<b>Basionym/synonym(s)</b>	<i>Laurus malabattrum</i> Burm. f.; <i>Cinnamomum iners sensu</i> Gamble	
<b>Local name(s)</b>	Vayana, Karappa, Illavangam	
<b>Distribution</b>	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Chimmoni (Thrissur)	
<b>Date(s) of planting</b>	21.06.2005	
<b>Accession number (s)</b>	KFRI-AB 2053 to KFRI-AB 2077	
<b>Quadrat number(s)</b>	6, 7, 10	
<b>Description</b>	<b>Habit</b>	Trees with smooth, reddish-brown, aromatic bark, reddish inside and brittle when dry and densely subadpressed pilose branchlets.
	<b>Leaves</b>	Simple, opposite or sub opposite, 9-20 x 2.5-5 cm, elliptic, oblong or oblong-lanceolate, glabrous and glossy, often pink-red when young, obtuse at base, acute or acuminate at apex.
	<b>Flowers</b>	Pale or greenish white in lax terminal or axillary panicles with tomentose perianth lobes.
	<b>Fruits and seeds</b>	Berries, globose, shortly six toothed, subtended by the enlarged, fleshy copular perianth; seed one with thin testa.
<b>Flowers and fruits</b>	November - March	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 251 cm with in a period of 4.5 years.	

<b>50. <i>Cinnamomum verum</i> J. S. Presl</b>		
<b>Family</b>	Lauraceae	
<b>Basionym/synonym(s)</b>	<i>Cinnamomum zeylanicum</i> Bl.	
<b>Local name(s)</b>	Ilavargam, Karuva, Karukapatta, Vayana	
<b>Distribution</b>	South -West India, Sri Lanka	
<b>Source locality(s)</b>	Dhoni (Palakkad)	
<b>Date(s) of planting</b>	14.11.2003	
<b>Accession number(s)</b>	KFRI-AB 1080 to KFRI-AB 1095	
<b>Quadrat number(s)</b>	12, 16	
<b>Description</b>	<b>Habit</b>	Trees, 8-12 m high with thick, smooth brown, vertical bark, buttressed bole, compressed twigs and young parts glabrous except the silky buds.
	<b>Leaves</b>	Simple, stout, 6-15 x 3-6 cm, ovate or ovate-lanceolate, coriaceous, entire, glabrous and shiny above, paler beneath, rounded or acute at base, subacute or shortly rounded at apex.
	<b>Flowers</b>	Greenish white, numerous in silky pubescent, lax racemes, longer than the leaves with long peduncles and tubular perianth.
	<b>Fruits and seeds</b>	Berries dark purple, fleshy, 1-2 cm long, oblong or ovoid-oblong, minutely apiculate, surrounded by enlarged perianth.
<b>Flowers and fruits</b>	November - March	
<b>Notes</b>	Field-planted seedlings attain an average height of 155 cm with in a period of 5 years.	



<b>51. <i>Clausena indica</i> (Dalz.) Oliver</b>		
<b>Family</b>	<b>Rutaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Piptostylis indica</i> Dalz.	
<b>Local name(s)</b>	Kattumunthiri, Gorakotta	
<b>Distribution</b>	Peninsular India, Sri Lanka	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	21.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2128 to KFRI-AB 2135; KFRI-AB 2137; KFRI-AB 2138; KFRI-AB 2140; KFRI-AB 2142; KFRI-AB 2145 to KFRI-AB 2152	
<b>Quadrat number(s)</b>	15	
<b>Description</b>	<b>Habit</b>	Shrubs or small trees, 3-6 m high with glabrous branchlets.
	<b>Leaves</b>	Imparipinnate, 8-20 cm long; leaflets 2.5-6.5 x 2-3 cm, ovate-oblong or lanceolate, crenulate, gland-dotted, glabrous, oblique at base, obtusely acuminate, acute, rounded or notched at apex.
	<b>Flowers</b>	White, in terminal or axillary racemes or corymbose panicles; short pedicillate, petals pale, glabrous.
	<b>Fruits and seeds</b>	Berries salmon or cream-coloured, up to 1 cm in diameter, globose, pulpy, 2-5 loculed with oblong seeds.
<b>Flowers and fruits</b>	November - May	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 98 cm with in a period of 2.5 years.	

<b>52. <i>Cleistanthus collinus</i> (Roxb.) Benth. ex Hook.f.</b>		
<b>Family</b>	<b>Euphorbiaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Chytia collina</i> Roxb.	
<b>Local name(s)</b>	Odugu	
<b>Distribution</b>	India , Sri Lanka	
<b>Source locality(s)</b>	Natural stand	
<b>Date(s) of planting</b>	Not planted	
<b>Accession number(s)</b>	KFRI-AB 648 to KFRI-AB 664	
<b>Quadrat number(s)</b>	48, 64, 71, 72, 73, 75, 76, 78	
<b>Description</b>	<b>Habit</b>	Trees 6-15 m high with dark brown, rough, flaking off bark and densely rufus villose young branches.
	<b>Leaves</b>	Simple, distichous, 5-13 x 2-4 cm, oblanceolate, glabrous, slightly hairy above, glaucous and thinly hairy beneath, entire, decurrent into the petiole at base, acuminate at apex.
	<b>Flowers</b>	Yellow, monocious, borne on main leafy branches or small lateral branchlets in axillary clusters; female flowers 0.3-0.7 cm, glabrous; male flowers pentamerous.
	<b>Fruits and seeds</b>	Capsules up to 0.5 cm long, sub globose, 2-valved, sparsely fulvous hairy, black or brownish black, 3-lobed; seeds black, globose.
<b>Flowers and fruits</b>	November - April	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 250 cm with in a period of 5 years.	

<b>53. <i>Cordia wallichii</i> G. Don</b>		
<b>Family</b>	<b>Boraginaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Cordia tomentosa</i> Wall.; <i>Cordia obliqua</i> Willd.	
<b>Local name(s)</b>	Virimaram, Periyaviri	
<b>Distribution</b>	South-West India ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Dhoni (Palakkad)	
<b>Date(s) of planting</b>	25.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2755, KFRI-AB 2756, KFRI-AB 2758 to KFRI-AB 2779	
<b>Quadrat number(s)</b>	11, 15	
<b>Description</b>	<b>Habit</b>	Trees, up to 15 m high, with minutely tomentose branchlets.
	<b>Leaves</b>	Simple, 8-17 cm long, 6-17 x 5-8 cm, orbicular ovate, almost glabrous above, stellate, fulvous or white tomentose beneath, cordate or truncate at base, acute at apex.
	<b>Flowers</b>	Creamy white, in lax terminal corymbose cymes or racemes.
	<b>Fruits and seeds</b>	Drupes ovoid, one-seeded in each locule, acuminate, usually with viscid pulp; seeds 1-4; 2 seeds are separated by a stony septum, exalbuminous.
<b>Flowers and fruits</b>	December - April	
<b>Notes</b>	Field-planted seedlings attain an average height of 170 cm with in a period of 3.5 years.	

<b>54. <i>Cryptocarya wightiana</i> Thw.</b>		
<b>Family</b>	<b>Lauraceae</b>	
<b>Basionym/synonym(s)</b>	<i>C. bourdillonii</i> Gamble	
<b>Local name(s)</b>	Kadamanpara	
<b>Distribution</b>	South Asia	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	23.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3399 to KFRI-AB 3415; KFRI-AB 3417 to KFRI-AB 3423	
<b>Quadrat number(s)</b>	68	
<b>Description</b>	<b>Habit</b>	Trees 8-12 m high with bark 10-12 mm thick and having corky lenticels and rusty pubescent young parts.
	<b>Leaves</b>	Simple, 8-20 x 4-7 cm, entire, elliptic-oblong, glabrous above, whitish beneath, sub acute or rounded at base, shortly acuminate at apex.
	<b>Flowers</b>	Yellowish in spreading axillary pubescent panicles, often shorter than the leaves, short pedicel with perianth cupular at the base.
	<b>Fruits and seeds</b>	Berries purplish black, about 1 cm in diameter, oblong-ellipsoid or subglobose with an obtuse beak, glabrous, enclosed in accrescent perianth tube; seed 1 with membranous testa, often scarcely separable from the pericarp.
<b>Flowers and fruits</b>	December - April	
<b>Notes</b>	Field-planted seedlings attain an average growth of 106 cm with in a period of 2.5 years.	

<b>55. <i>Cycas circinalis</i> L.</b>		
<b>Family</b>	Cycadaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Eenth, Kalanga, Theddappana	
<b>Distribution</b>	Indo-Malesia, Tropical East Africa	
<b>Source locality(s)</b>	Natural stand	
<b>Date(s) of planting</b>	Not planted	
<b>Accession number(s)</b>	KFRI-AB 811 to KFRI-AB 838	
<b>Quadrat number(s)</b>	18, 29, 14	
<b>Description</b>	<b>Habit</b>	Palm-like trees up to 8 m high with brown bark, tessellated above by diamond-shaped scars of fallen leaves.
	<b>Leaves</b>	Pinnate, 1-2 m long, spiny with leaflets 3-8 x 0.6-1.5 cm, blunt or acute at apex with flat margin.
	<b>Flowers</b>	Dioecious; male cones terminal, peduncled with cuneate scales, long-acuminate apex; carpophylls numerous crowded around the stem apex, elongate, flattened, expanded at apex, densely woolly, with up to 5 ovules on either side.
	<b>Fruits and seeds</b>	Seeds light yellow when ripe, 2-3.5 cm long, ovoid-oblong or ellipsoid.
<b>Flowers and fruits</b>	March - May	
<b>Notes</b>	Seeds germinate by 10-15 per cent with in a period of 8 to 12 weeks; growth of seedlings very slow.	

<b>56. <i>Dalbergia lanceolaria</i> L.</b>		
<b>Family</b>	Papilionaceae	
<b>Basionym/synonym(s)</b>	<i>D. frondosa</i> Roxb.; <i>D. paniculata</i> ssp. /var. <i>lancolaria</i>	
<b>Local name(s)</b>	Velleetti, Kannanvaaka	
<b>Distribution</b>	India, Myanmar, Sri Lanka, Nepal	
<b>Source locality(s)</b>	Natural stand	
<b>Date(s) of planting</b>	Not planted	
<b>Accession number(s)</b>	KFRI-AB 416 to KFRI-AB 427; KFRI-AB 429 to KFRI-AB 456; KFRI-AB 458 to KFRI-AB 462; KFRI-AB 464; KFRI-AB 467 to KFRI-AB 483	
<b>Quadrat number(s)</b>	1, 4, 6, 7, 9, 10, 17, 18, 19, 20, 21, 22, 23, 29, 30, 31, 34, 35, 36, 40, 41, 50, 51, 52, 62, 63, 68, 70, 77, 80	
<b>Description</b>	<b>Habit</b>	Trees, 15-20 m high with flaking bark and glabrous, surface grey brown branchlets.
	<b>Leaves</b>	Imparipinnate, stipulate, 7.5-30 cm long; leaflets 7-21, 2.5-6.4 x 1.5-3.8 cm, ovate, entire, glabrous, obtuse at base, acute at apex.
	<b>Flowers</b>	Pinkish to bluish white, fragrant in short unilateral racemes forming terminal panicles; rachis and pedicels pubescent when young, glabrous later.
	<b>Fruits and seeds</b>	Pods 3.8-12.7 x 1.5-2 cm, often sinuate between seeds; seeds 1-3. oval, reniform, compressed.
<b>Flowers and fruits</b>	May - June; December - March	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average growth of 106 cm with in a period of 2.5 years.	

<b>57. <i>Dalbergia sissoides</i> Grah. ex Wt. et Arn.</b>		
<b>Family</b>	<b>Papilionaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Dalbergia latifolia</i> Roxb. var. <i>sissoides</i> Grah. ex Wt. et Arn.	
<b>Local name(s)</b>	Kariveetti, Cholaveetti	
<b>Distribution</b>	Peninsular India, Indonesia	
<b>Source locality(s)</b>	Natural stand and planted; Peechi (Thrissur)	
<b>Date(s) of planting</b>	25.08.2004	
<b>Accession number(s)</b>	KFRI-AB-723 to 731; KFRI-AB-733; KFRI-AB 1917 to KFRI-AB 1920	
<b>Quadrat number(s)</b>	20,26,31,32,44,52,72,75	
<b>Description</b>	<b>Habit</b>	Trees, up to 18 m high with the bark surface pale to brown, smooth, flaking off; spreading glabrous branches.
	<b>Leaves</b>	Imparipinnate, 12-15 cm long; leaflets 3.8-6.3 x 1.3-2.6 cm, ovate to obovate, rarely oblong, entire, glabrous, tapering at both ends.
	<b>Flowers</b>	White, in loose terminal panicles; rachis glabrous, pedicilate.
	<b>Fruits and seeds</b>	Pods 5-7.5 cm x 1.3 cm, glabrous, tapering at both ends; 1-3 seeded, seeds reniform, pale brown.
<b>Flowers and fruits</b>	January - March; October - January	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 156 cm with in a period of 3.5 years.	

<b>58. <i>Delonix regia</i> (Boj. ex Hook.) Rafin.</b>		
<b>Family</b>	<b>Mimosaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Poinciana regia</i> Boj. ex Hook.	
<b>Local name(s)</b>	Gulmohar, Alasippoomaram, Poomaram	
<b>Distribution</b>	Native of Madagascar; planted elsewhere as an ornamental tree	
<b>Source locality(s)</b>	Natural stand	
<b>Date(s) of planting</b>	Not planted	
<b>Accession number(s)</b>	KFRI-AB 808	
<b>Quadrat number(s)</b>	72	
<b>Description</b>	<b>Habit</b>	Trees up to 18 m high with brown, slightly rough bark, broad, spreading crown and warty, pubescent branchlets.
	<b>Leaves</b>	Bipinnate, 30-60 cm long with 11-18 pairs of pinnae; leaflets 20-30 pairs in each pinna, 6-8 x 0.2-0.3 cm, entire, puberulent above, pubescent beneath, oblong at base, obtuse at apex.
	<b>Flowers</b>	Bright scarlet or orange coloured in terminal or axillary corymbose panicles, almost covering the canopy.
	<b>Fruits and seeds</b>	Pods dark brown to black, 30-60 x 3.8-7.6 cm, thick, ending in a short beak; seeds many, oblong, transverse.
<b>Flowers and fruits</b>	April - May; May - July	
<b>Notes</b>	Seeds germinate by about 68-75 per cent. Field-planted seedlings attain an average height of 450 cm with in a period of 2.5 years.	

<b>59. <i>Dichrostachys cinerea</i> (L.) Wt. et Arn.</b>		
<b>Family</b>	Mimosaceae	
<b>Basionym/synonym(s)</b>	<i>Mimosa cinera</i> L.	
<b>Local name(s)</b>	Veeravriksham	
<b>Distribution</b>	India, SriLanka	
<b>Source locality(s)</b>	Chinnar (Idukki)	
<b>Date(s) of planting</b>	25.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2838 to KFRI-AB 2846; KFRI-AB 2848 to KFRI-AB 2851; KFRI-AB 2853 to KFRI-AB 2862	
<b>Quadrant number(s)</b>	58, 59	
<b>Description</b>	<b>Habit</b>	Thorny shrubs or trees, 4-6 m high with furrowed bark, peeling off as small flakes; branchlets often ending in spines.
	<b>Leaves</b>	Bipinnate, up to 5 cm long, feathery; pinnae 5-9 pairs; leaflets sessile, 8-15 pairs, dark green, about 0.25 cm long, obtuse at base, acute at apex.
	<b>Flowers</b>	Yellow, pink or purple, polygamous, in long axillary or extra-axillary spikes with upper flowers bisexual and lower flowers neuter.
	<b>Fruits and seeds</b>	Pods dark brown, 4-6.5 x 0.4-0.6 cm, flat, twisted when ripe, auriculated between seeds; seeds 6-10 per pod, ovoid, brown, polished, compressed.
<b>Flowers and fruits</b>	September-October; All seasons	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 154 cm with in a period of 2.5 years.	

<b>60. <i>Dimocarpus longan</i> Lour.</b>		
<b>Family</b>	Sapindaceae	
<b>Basionym/synonym(s)</b>	<i>Euphoria longan</i> (Lour.) Steud.; <i>Nephelium longana</i> (Lam.) Camp.	
<b>Local name(s)</b>	Chempoovam, Chempunna, Poripunna	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	28.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3676; KFRI-AB 3155 to KFRI-AB 3159; KFRI-AB 3170 to KFRI-AB 3189	
<b>Quadrant number(s)</b>	18, 22	
<b>Description</b>	<b>Habit</b>	Trees, 8-15 m high with smooth, flaking bark and young parts clothed with rufous-stellate pubescence.
	<b>Leaves</b>	Paripinnate, 8-40 cm long; leaflets 2-5 pairs, reddish when young, 5-17.5 x 2-4.5 cm, oblong or ovate-lanceolate, coriaceous, entire, cuneate and oblique at base, shortly acuminate at apex.
	<b>Flowers</b>	White, polygamous in terminal and axillary much-branched puberulous panicles.
	<b>Fruits and seeds</b>	Schizocarp reddish with 1-3 cocci, globose or ovoid, supported on the persistent calyx; seeds enclosed in fleshy aril.
<b>Flowers and fruits</b>	January - April	
<b>Notes</b>	Field-planted seedlings attain an average height of about 141 cm with in a period of 2.5 years.	

<b>61. <i>Diospyros bourdillonii</i> Brandis</b>		
<b>Family</b>	Ebenaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Kakkakarimaram, Karikkodal, Therikku	
<b>Distribution</b>	Peninsular India in the Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Vazhani (Thrissur)	
<b>Date(s) of planting</b>	27.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3129 to KFRI-AB 3136; KFRI-AB 3137 to KFRI-AB 3147; KFRI-AB 3149 to KFRI-AB 3152	
<b>Quadrat number(s)</b>	49	
<b>Description</b>	<b>Habit</b>	Trees, up to 25 m high with fluted bole, bark nearly black and flaking off in thin scales; young branches strigose.
	<b>Leaves</b>	Simple, drooping, up to 12 x 4.5 cm, oblong, ovate-oblong, subcoriaceous, glabrous and shining, rounded or obtuse at base, obtusely acuminate at apex.
	<b>Flowers</b>	Unisexual, white; male flowers in axillary few-flowered cymes with 15 stamens; female flowers brown in cymes from old branches.
	<b>Fruits and seeds</b>	Berries globose, dark green, almost 3 cm across with persistent cup-like calyx; seeds compressed, covered with pulp.
<b>Flowers and fruits</b>	March - December	
<b>Notes</b>	Field-planted seedlings attain an average height of 100 cm with in a period of 2.5 years.	

<b>62. <i>Diospyros buxifolia</i> (Bl.) Hiern</b>		
<b>Family</b>	Ebenaceae	
<b>Basionym/synonym(s)</b>	<i>D. microphylla</i> Bedd.; <i>Leucoxyllum buxifolium</i> Bl.	
<b>Local name(s)</b>	Elichevian, Malamuringa, Elichuzhi	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Chimmony (Thrissur)	
<b>Date(s) of planting</b>	01.06.2004	
<b>Accession number(s)</b>	KFRI-AB 1678 to KFRI-AB 1699	
<b>Quadrat number(s)</b>	80	
<b>Description</b>	<b>Habit</b>	Trees, 20-25 m high with unbranched trunk, buttressed at base; branchlets densely golden yellow hairy.
	<b>Leaves</b>	Simple, bifarious, 1.5-2.5 x 1-1.5 cm, ovate-elliptic, entire, glabrous above, sparsely hairy beneath when young, tapering at base, acute or obtusely acuminate at apex.
	<b>Flowers</b>	White, dioecious or rarely polygamous; male flowers, 1-4 together in subsessile, minute, axillary cymes; female flowers solitary, subsessile.
	<b>Fruits and seeds</b>	Berries 0.5-1.5 x 0.2-0.5 cm, cylindrical or oblong, glabrous, pointed, usually supported by the enlarged calyx; seeds 1-2 with albuminous endosperm.
<b>Flowers and fruits</b>	March - May	
<b>Notes</b>	Field-planted seedlings attain an average growth of 397cm with in a period of 3.5 years.	

<b>63. <i>Diospyros ebenum</i> Koenig</b>		
Family	Ebenaceae	
Basionym/synonym(s)	Nil	
Local name(s)	Ebony, Karingali	
Distribution	Peninsular India, Sri Lanka	
Source locality(s)	Chinnar (Idukki)	
Date(s) of planting	28.07.07	
Accession number(s)	KFRI-AB 3047. KFRI-AB 3048	
Quadrant number(s)	42	
Description	<b>Habit</b>	Trees, up to 15 m high with bark black to grey, rough, peeling off in small rectangular flakes, fissured, brittle.
	<b>Leaves</b>	Simple, 4.5-15x 4-5 cm, elliptic- oblong, oblong- lanceolate, entire, glabrous, cunate or acute at base, acuminate at apex.
	<b>Flowers</b>	Greenish yellow; male flowers 3-15, in short axillary in umbellate clusters with densely tomentose peduncle; female flowers solitary, axillary.
	<b>Fruits and seeds</b>	Berries subglobose with short apical beak with enlarged calyx forming a shallow wooden cup; seeds 3-8, dull black, albuminous.
Flowers and fruits	February - April	
Notes	Seeds germinate by about 81 per cent. Field-planted seedlings attain an average height of 39 cm with in a period of 8 months.	

<b>64. <i>Diospyros malabarica</i> (Desr.) Kostel.</b>		
Family	Ebenaceae	
Basionym/synonym(s)	<i>Diospyros peregrine</i> (Gaertn.)Gurke	
Local name(s)	Panachi, Vanachi	
Distribution	Indo-Malesia ( <b>Endemic</b> )	
Source locality(s)	Periyar (Pathanamthitta)	
Date(s) of planting	27.06.2005	
Accession number(s)	KFRI-AB-3129 to KFRI-AB 3151	
Quadrant number(s)	49	
Description	<b>Habit</b>	Evergreen, dioecious trees, up to 25m high, black bark with greenish tinge flaking off in thick scales; young branches glabrous.
	<b>Leaves</b>	Simple, alternate, estipulate, up to 13-25 x 4-7 cm, oblong, oblong-lanceolate, entire, glabrous and shining, rounded or obtuse at base, acute or obtuse at apex.
	<b>Flowers</b>	Unisexual, pale yellow, dioecious; male flowers in axillary drooping cymes with 15 stamens; female flowers solitary, axillary, drooping.
	<b>Fruits and seeds</b>	Berry, sub globose, yellow, covered with a rusty easily detachable scruffiness; 5-6 cm across; much enlarged calyx, woody ; seeds 4-8, flattened, reddish brown.
Flowers and fruits	March - December	
Notes	Seeds germinate by about 81 per cent. Field-planted seedlings attain an average height of 100 cm with in a period of 2.5 years.	

<b>65. <i>Diospyros montana</i> Roxb.</b>		
<b>Family</b>	Ebenaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Malayakathitholi, Manjakara	
<b>Distribution</b>	Indo-Malesia to Australia	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	24.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2705 to KFRI-AB 2729	
<b>Quadrat number(s)</b>	42, 43, 45	
<b>Description</b>	<b>Habit</b>	Trees, rarely armed, 6-8 m high with greyish brown bark and soft, pubescent young branches.
	<b>Leaves</b>	Simple, 5-10 x 2.5-4.5 cm, ovate-oblong or elliptic, puberulous or tomentose when young, rounded, acute or rarely truncate at base, subacute or obtusely acuminate at apex.
	<b>Flowers</b>	White, dioecious or rarely polygamous; male flowers in axillary umbels; female inflorescence often with single flower.
	<b>Fruits and seeds</b>	Berries, yellow, 2 -3 cm in diameter, globose, with enlarged and reflexed persistent calyx lobes; seeds 3-6, rough, black.
<b>Flowers and fruits</b>	March - June; December - February	
<b>Notes</b>	Field-planted seedlings attain an average height of 118 cm within a period of 2.5 years.	

<b>66. <i>Diospyros paniculata</i> Dalz.</b>		
<b>Family</b>	Ebenaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Karivella, Ilakkatta	
<b>Distribution</b>	Peninsular India in the Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	27.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3080 to KFRI-AB 3097	
<b>Quadrat number(s)</b>	8, 9, 12, 16	
<b>Description</b>	<b>Habit</b>	Trees, 8-12 m high with cylindrical trunk, smooth, black coloured bark and glabrous, somewhat angular branches.
	<b>Leaves</b>	Simple, 6.5-20 x 2.5-7.5 cm, oblong, subcoriaceous, glabrous, rounded or very shortly narrowed at base, obtusely acuminate at apex; petioles stout, wringed and puberulent when young.
	<b>Flowers</b>	Greenish yellow, dioecious; male flowers up to 2 cm long, numerous in paniced cymes from the axils of fallen leaves, pubescent; female flowers solitary, axillary, 1-2 cm long, pediceled, larger than the male flowers.
	<b>Fruits and seeds</b>	Berries yellowish brown, five angled, puberulent, tipped with the styler base, clothed with ferruginous glandular hairs, 2-2.5 cm long, ovoid, rounded at apex; seeds few, about 2 x 0.8 cm in size.
<b>Flowers and fruits</b>	December - August	
<b>Notes</b>	Field-planted seedlings attain an average height of 84 cm within a period of 2.5 years.	



<b>67. <i>Diospyros sylvatica</i> Roxb.</b>		
<b>Family</b>	Ebenaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Karimaram, Manja thuvara	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	28.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3105 to KFRI-AB 3123	
<b>Quadrant number(s)</b>	43, 46, 47, 49, 50, 51, 52	
<b>Description</b>	<b>Habit</b>	Trees, up to 25 m high with thin, dull grey, smooth bark, yellowish inside and puberulous branchlets.
	<b>Leaves</b>	Simple, 6-11.5 x 2-5 cm, entire, shiny above, paler beneath, glabrous, acute at base, acute or acuminate at apex.
	<b>Flowers</b>	White, dioecious; male flowers in axillary, 6-10 flowered cymes, 0.3-1.2 cm long; female flowers solitary, larger than the male with 4 staminodes and 6-8 loculed ovary.
	<b>Fruits and seeds</b>	Berries dark green, 1-2 cm in diameter, globose supported by the much-enlarged, spreading, foliaceous calyx; seeds, brown, 2-8, oblong rugous, shiny.
<b>Flowers and fruits</b>	March - April	
<b>Notes</b>	Field-planted seedlings attain an average height of 211 cm with in a period of 2.5 years.	

<b>68. <i>Dipterocarpus bourdillonii</i> Brandis</b>		
<b>Family</b>	Dipterocarpaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Charatta-anjili	
<b>Distribution</b>	Western Ghats of India ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Pooyamkutty (Idukki)	
<b>Date(s) of planting</b>	28.07.2007	
<b>Accession number(s)</b>	KFRI-AB 2888, KFRI-AB 2338, KFRI-AB 2336, KFRI-AB 2175, KFRI-AB 2400	
<b>Quadrant number(s)</b>	2, 4, 5	
<b>Description</b>	<b>Habit</b>	Trees, up to 45 m high; bark grey, exfoliating in thick irregular flakes; young parts dense brown tomentose.
	<b>Leaves</b>	Simple with large, lateral stipules, leaving annular scar, 20-45 x 12-25 cm, ovate or obovate, entire, wavy along margins, glabrous above, stellate hairy beneath, obtuse, rounded or subcordate at base, acute or acuminate at apex.
	<b>Flowers</b>	White, fragrant, 3-5 together in short axillary racemes.
	<b>Fruits and seeds</b>	Nuts globose with purplish brown, enclosed at the base of thickened accrescent calyx lobes; calyx tube 5-angular, wings 5; seeds 1 with large, thick cotyledon.
<b>Flowers and fruits</b>	January - June	
<b>Notes</b>	Field-planted seedlings attain an average height of 45 cm with in a period of 1 year.	

<b>69. <i>Dipterocarpus indicus</i> Bedd.</b>		
<b>Family</b>	<b>Dipterocarpaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Dipterocarpus turbinatus sensu</i> Dyer	
<b>Local name(s)</b>	Karanjili, Kalpayin	
<b>Distribution</b>	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Parambikulam (Palakkad)	
<b>Date(s) of planting</b>	28.12.2006	
<b>Accession number(s)</b>	KFRI-AB 2948	
<b>Quadrat number(s)</b>	73	
<b>Description</b>	<b>Habit</b>	Lofy ever green trees, to 35 m high, bole straight, pale grey, smooth bark, exfoliations irregular, brittle; branchlets tomentose.
	<b>Leaves</b>	Simple with large, lateral stipules, leaving annular stipular scars; 7-25 x 4-17.5cm, ovate, crenate, undulate, glabrous, obtuse or subcordate at base, acute at apex.
	<b>Flowers</b>	White, fragrant, 3-5 together in axillary racemes.
	<b>Fruits and seeds</b>	Nuts with two oblong, reddish brown, up to 10 x 2 cm wings; 1 seeded, large, thick cotyledon.
<b>Flowers and fruits</b>	February - July	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 36 cm with in a period of 1 year.	

<b>70. <i>Drypetes roxburghii</i> (Wall.) Hurusawa</b>		
<b>Family</b>	<b>Euphorbiaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Putranjiva roxburghii</i> Wall.	
<b>Local name(s)</b>	Poothilanj, Ekkoli	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Parambikulam (Palakad)	
<b>Date(s) of planting</b>	25.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2823 to KFRI-AB 2837	
<b>Quadrat number(s)</b>	43,47	
<b>Description</b>	<b>Habit</b>	Trees, 7-15 m high with drooping, nearly glabrous branches, except when young, and corky, pale bark, whitish when young.
	<b>Leaves</b>	Simple, 4-9.5 x 1.5-3 cm, elliptic-oblong, distinctly serrulate, entire, penninerved and reticulately veined, obtuse at base, acute-obtuse or shortly acuminate at apex.
	<b>Flowers</b>	Yellow, unisexual, small; male flowers sessile, glabrous in axillary spikes; female flowers, puberulous, 1-3 in an axil.
	<b>Fruits and seeds</b>	Drupes 1-2 cm long, ellipsoid, rounded or pointed at apex, narrowed at base, white tomentose; seed one, crustaceous.
<b>Flowers and fruits</b>	March - April	
<b>Notes</b>	Field-planted seedlings attain an average height of 70.8 cm with in a period of 2.5 years.	

<b>71. <i>Dysoxylum malabaricum</i> Bedd. ex Hiern</b>		
<b>Family</b>	Meliaceae	
<b>Basionym/synonym(s)</b>	<i>D. glandulosum</i> Talb.	
<b>Local name(s)</b>	Akil, Purippa, Vellakil	
<b>Distribution</b>	Peninsular India in the Southern Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Sholayar (Thrissur)	
<b>Date(s) of planting</b>	25.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2889 to KFRI-AB 2895; KFRI-AB 2899 to KFRI-AB 2900; KFRI-AB 2902 to KFRI-AB 2904; KFRI-AB 2907 to KFRI-AB 2912	
<b>Quadrant number(s)</b>	2, 16, 20	
<b>Description</b>	<b>Habit</b>	Trees, 20-25 m high with pale grey, rough bark with warty lenticels, shallowly fissured and puberulous branchlets.
	<b>Leaves</b>	Pinnate, up to 40 cm long; leaflets 7-11, up to 20 x 5 cm, lanceolate, oblique at base, acuminate at apex.
	<b>Flowers</b>	Greenish-yellow, fragrant in axillary panicles or racemes, 0.6-0.7 cm long; calyx deeply 4 lobed.
	<b>Fruits and seeds</b>	Capsules yellow, pear-shaped, 5-7.5 cm long, vertically ridged and furrowed; seeds reddish brown, bluntly trigonous.
<b>Flowers and fruits</b>	February - April; June - July	
<b>Notes</b>	Seeds germinate by about 80 per cent. Field-planted seedlings attain an average height of 110 cm within a period of 2.5 years.	

<b>72. <i>Elaeocarpus tuberculatus</i> Roxb.</b>		
<b>Family</b>	Elaeocarpaceae	
<b>Basionym/synonym(s)</b>	<i>Monocera tuberculata</i> (Roxb.) Wt. et Arn.	
<b>Local name(s)</b>	Kara, Kodavasi, Mukkanni, Thodayam, Vellathaanni	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Aathirappilly (Thrissur)	
<b>Date(s) of planting</b>	23.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2541, KFRI-AB-2546 to KFRI-AB 2554	
<b>Quadrant number(s)</b>	5, 8, 9, 64	
<b>Description</b>	<b>Habit</b>	Trees, 20-25 m high with bole buttressed, monopodial branching, greyish brown, rough bark and spreading crown.
	<b>Leaves</b>	Simple, clustered at the tip of the branchlets, 10-15 x 5-9, obovate, crenate-serrate or sub entire, strongly pinnately-nerved, glabrous above, fulvous pubescent along the nerves beneath, rounded at base, obtuse at apex.
	<b>Flowers</b>	Dull white, numerous, in rusty pubescent, long, axillary racemes up to 12 cm long with ovoid and acute buds.
	<b>Fruits and seeds</b>	Drupes 2- 4.5 cm long, green, oblong or ellipsoid with compressed stones, pubescent on flattened sides, thickened along the margins; seeds 2, stone 2 loculed.
<b>Flowers and fruits</b>	December - August	
<b>Notes</b>	Field-planted seedlings attain an average height of 240 cm within a period of 2.5 years.	

**73. *Erythrina stricta* Roxb.**

<b>Family</b>	<b>Papilionaceae</b>	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Mullumurikku, Murikku	
<b>Distribution</b>	India, China, Nepal	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	25.08.2004	
<b>Accession number(s)</b>	KFRI-AB 1921 to KFRI-AB 1930	
<b>Quadrat number(s)</b>	9, 12, 16	
<b>Description</b>	<b>Habit</b>	Trees 8-18 m high, thick, yellowish, vertically fissured bark; branches armed with numerous whitish prickles and stellate, pubescent branchlets.
	<b>Leaves</b>	Pinnately trifoliate; leaflets 6-12.5 x 3.7-10 cm, glabrous, terminal one 8-15 cm reniform cordate, lateral unequal sided, ovate or subacute at base, shortly acuminate at apex.
	<b>Flowers</b>	Bright scarlet, in terminal horizontal racemes, as twin or fascicled along the rachis.
	<b>Fruits and seeds</b>	Pods up to 12 cm long, compressed, narrowed at both ends, stalked, 1-3 seeded; seeds red or dark red to purple.
<b>Flowers and fruits</b>	February - May; May - July or up to November	
<b>Notes</b>	Field-planted seedlings attain an average height of 345 cm within a period of 4.5 years.	

**74. *Ficus dalhousiae* Miq.**

<b>Family</b>	<b>Moraceae</b>	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Kallal	
<b>Distribution</b>	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Natural strand	
<b>Date(s) of planting</b>	Not planted	
<b>Accession number(s)</b>	KFRI-AB 735 to KFRI-AB 741	
<b>Quadrat number(s)</b>	38, 47, 60, 61	
<b>Description</b>	<b>Habit</b>	Trees, 10-30 m high, sometimes epiphytic without aerial roots; bark smooth, brown with white milky exudation.
	<b>Leaves</b>	Simple, about 25 x 15 cm, broadly ovate or ovate-oblong, entire, glabrous above, pubescent beneath, cordate at base, acute or acuminate at apex.
	<b>Flowers</b>	Syconia, unisexual in axillary pairs; flowers of four kinds; male flowers sessile, globose, very few towards the apex of the receptacle; female flowers sessile with gamophyllus perianth.
	<b>Fruits and seeds</b>	Figs yellow when ripe, oblong-globose, glabrous on less than 1 cm long peduncles; seeds numerous, minute, globose, smooth.
<b>Flowers and fruits</b>	December- January	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 34 cm within a period of 1 year.	

<b>75. <i>Ficus exasperata</i> Vahl</b>		
<b>Family</b>	Moraceae	
<b>Basionym/synonym(s)</b>	<i>F. asperrima</i> Roxb.	
<b>Local name(s)</b>	Parakam, Therakam	
<b>Distribution</b>	India, Sri Lanka, East Africa, Arabia	
<b>Source locality(s)</b>	Natural stand	
<b>Date(s) of planting</b>	Not planted	
<b>Accession number(s)</b>	KFRI-AB 775	
<b>Quadrant number(s)</b>	64	
<b>Description</b>	<b>Habit</b>	Shrubs or small trees, 3-6 m high; bark white, smooth with watery exudation; young shoots scabrous with out aerial roots.
	<b>Leaves</b>	Simple, spiral or opposite, 3-6.5 x 2-5 cm, oblong or elliptic, entire or rarely lobbed, serrate or crenate in the upper part, hispid on both surfaces, rounded at base, acute or acuminate at apex.
	<b>Flowers</b>	Syconium purple with yellowish spots or yellow when ripe, axillary, solitary, globose, with numerous male flowers; female flowers sessile, hairy.
	<b>Fruits and seeds</b>	Figs 1cm in diameter, globose; achenes elongate, obovoid, minutely tuberculate.
<b>Flowers and fruits</b>	March - April	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 64 cm with in a period of 1 year.	

<b>76. <i>Ficus racemosa</i> L.</b>		
<b>Family</b>	Moraceae	
<b>Basionym/synonym(s)</b>	<i>F. glomerata</i> Roxb.	
<b>Local name(s)</b>	Atthi	
<b>Distribution</b>	Indo-Malesia to Australia and South China	
<b>Source locality(s)</b>	Sholayar (Thrissur)	
<b>Date(s) of planting</b>	27.06.2006	
<b>Accession number(s)</b>	KFRI-AB 3024 to KFRI-AB 3028; KFRI-AB 2648; KFRI-AB 2631; KFRI-AB 3600; KFRI-AB 2699; KFRI-AB 2688; KFRI-AB 1355	
<b>Quadrant number(s)</b>	29, 31, 32, 37	
<b>Description</b>	<b>Habit</b>	Trees 15-20 m high with thick fibrous bark and glabrous, pubescent or scaberulous young shoots.
	<b>Leaves</b>	Simple, 4.5-11 x 2.5-6 cm, ovate oblong or elliptic-lanceolate, entire, glabrous, acute or round at base, tapering point at apex, 3-nerved.
	<b>Flowers</b>	Syconia with red receptacles, 2.5-3 cm across, pyriform or subglobose; male flowers sessile, near the mouth of the receptacles; female flowers sessile or short stalked among the gall of flowers.
	<b>Fruits and seeds</b>	Figs orange-red when ripe, up to 2.5 cm long, pyriform; achenes studded to the inner wall, crustaceous.
<b>Flowers and fruits</b>	January - June	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 154 cm with in a period of 1.5 years.	

<b>7. <i>Ficus religiosa</i> L.</b>		
<b>Family</b>	Moraceae	
<b>Basionym/synonym(s)</b>	<i>Urostigma religiosum</i> (L.) Gasp.	
<b>Local name(s)</b>	Arayal, Thullal	
<b>Distribution</b>	India and neighbouring countries	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	15.11.2003; 19.11.2003	
<b>Accession number(s)</b>	KFRI-AB 1206 to KFRI-AB 1207; KFRI-AB 1382 to KFRI-AB 1385, KFRI-AB 2618	
<b>Quadrat number(s)</b>	25, 40	
<b>Description</b>	<b>Habit</b>	Trees with spreading branches, more than 25 m high, buttressed at base and with out aerial roots; bark with milky exudation.
	<b>Leaves</b>	Simple, young ones reddish, 4-6.5x 3-5 cm, broadly ovate and heart-shaped, entire, glabrous and shining with an apical acumen, truncate or subcordate at base, caudate-acuminate at apex.
	<b>Flowers</b>	Syconia sessile, axillary in pairs, globose or obovoid; male flowers sessile in one ring; female flower sessile, free, brownish and glabrous.
	<b>Fruits and seeds</b>	Syconium dark purple, 0.5-0.1 cm long, subglobose; achenes numerous, minute.
<b>Flowers and fruits</b>	January - March; October- June	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 221 cm with in a period of 4.5 years.	

<b>78. <i>Firmiana colorata</i> (Roxb.) R. Br.</b>		
<b>Family</b>	Sterculiaceae	
<b>Basionym/synonym(s)</b>	<i>Sterculia colorata</i> Roxb.; <i>S. rubicunda</i> Wall. ex Mast.	
<b>Local name(s)</b>	Malamparithi	
<b>Distribution</b>	Indo-Malaya	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	24.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2585 to KFRI-AB 2590; KFRI-AB 2593 to KFRI-AB 2594; KFRI-AB 2598; KFRI-AB 2600; KFRI-AB 2602 to KFRI-AB 2604	
<b>Quadrat number(s)</b>	39, 40	
<b>Description</b>	<b>Habit</b>	Buttressed trees, 20-25 m high with straight trunk, longitudinally fissured bark and spreading branches.
	<b>Leaves</b>	Simple, crowded at the ends of branches, 8.5-18.5 x 12-22.5 cm, 3-lobed, broader than long, glabrous or pubescent when young, deeply cordate at base, lobes triangular, acuminate at apex.
	<b>Flowers</b>	Orange red in densely tomentose, terminal, short panicles.
	<b>Fruits and seeds</b>	Aggregate of five follicles, up to 7 cm long, glabrous, membranous, opening before maturity; seeds usually 2, ovoid, smooth, yellow.
<b>Flowers and fruits</b>	March - April	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 85 cm with in a period of 3.5 years.	

<b>79. <i>Flacourtia montana</i> Grah.</b>		
<b>Family</b>	<b>Flacourtiaceae</b>	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Charalpazham	
<b>Distribution</b>	Peninsular India ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	03.06.2004	
<b>Accession number(s)</b>	KFRI-AB 1819 to KFRI-AB 1838; KFRI-AB 1841; KFRI-AB 3681 to KFRI-AB 3683	
<b>Quadrant number(s)</b>	44, 48	
<b>Description</b>	<b>Habit</b>	Stunted trees, 4-6 m high with thorny trunk and glabrous or pubescent branchlets.
	<b>Leaves</b>	Simple, 8-16 x 3-7 cm, ovate, crenate, glabrous, shiny above, acute or rounded at base, acute or acuminate at apex.
	<b>Flowers</b>	Unisexual, small, in axillary congested, pubescent cymes.
	<b>Fruits and seeds</b>	Berries scarlet, indehiscent, globose, with agreeable acid flavour, obtusely ribbed; seeds reddish, many, obovoid.
<b>Flowers and fruits</b>	April - June	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 227 cm with in a period of 3.5 years.	

<b>80. <i>Garcinia gummi-gutta</i> (L.) Robs.</b>		
<b>Family</b>	<b>Guttiferae</b>	
<b>Basionym/synonym(s)</b>	<i>Cambogia gummi-gutta</i> L.; <i>Garcinia cambogia</i> (Gaertn.) Desr.	
<b>Local name(s)</b>	Kodampuli, Meenpuli	
<b>Distribution</b>	Peninsular India in the Western Ghats ( <b>Endemic</b> ); also cultivated	
<b>Source locality(s)</b>	Palappilly (Thrissur)	
<b>Date(s) of planting</b>	15.11.2003	
<b>Accession number(s)</b>	KFRI-AB 1188 to KFRI-AB 1205	
<b>Quadrant number(s)</b>	21, 25, 26	
<b>Description</b>	<b>Habit</b>	Trees up to 15 m high with thick, black, rough, bark containing acrid juice, exudation pale yellow; tetragonous, drooping branchlets.
	<b>Leaves</b>	Simple, opposite, 8-12 x 3-5.5 cm, oblong or elliptic-lanceolate, entire, prominently nerved, glabrous and shiny above, pale green beneath, acute or decurrent at base, acute or acuminate at apex.
	<b>Flowers</b>	Yellowish, polygamo-dioecious; female flowers sessile or shortly pedicelled solitary, axillary; male flowers 2-5 in axillary fascicles.
	<b>Fruits and seeds</b>	Berries light yellow when ripe, 6-8 grooved, 4-6 cm across, depressed globose; seeds dark brown immersed in sweet, pulpy aril.
<b>Flowers and fruits</b>	January - September	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 202 cm with in a period of 4.5 years.	

<b>81. <i>Gliricidia sepium</i> (Jacq.) Kunth ex Walp.</b>		
Family	Fabaceae	
Basionym/synonym(s)	<i>Robinia sepium</i> Jacq.; <i>Gliricidia maculata</i> (Steud.) Kunth	
Local name(s)	Seema-konna	
Distribution	Native of South America; introduced and widely grown in India	
Source locality(s)	Natural stand	
Date(s) of planting	Not planted	
Accession number(s)	KFRI-AB 800	
Quadrant number(s)	54	
Description	<b>Habit</b>	Trees to 8 m high; branchlets glandular, pubescent with grey bark.
	<b>Leaves</b>	Imparipinnate with 7-21 leaflets; leaflets 2.5-8 x 1.5-5cm, ovate or ovate-oblong; entire, glabrous above, pubescent beneath, obtuse or oblique at base, acuminate at apex.
	<b>Flowers</b>	Rose-pink, in about 20 cm long racemes, with petals exerted and clawed.
	<b>Fruits and seeds</b>	Pods about 15 cm long, continuous; seeds ovoid or rounded.
Flowers and fruits	December - June	
Notes	Vegetatively propagated by stem cuttings. Field-planted cuttings attain an average height of 110 cm with in a period of 1 year.	

<b>82. <i>Gluta travancorica</i> Bedd.</b>		
Family	Anacardiaceae	
Basionym/synonym(s)	Nil	
Local name(s)	Chenkurinji, Thodappa	
Distribution	Peninsular India in the Western Ghats ( <b>Endemic</b> )	
Source locality(s)	Shendurney (Kollam)	
Date(s) of planting	25.06.2005	
Accession number (s)	KFRI-AB 2863 to KFRI-AB 2887	
Quadrant number(s)	1, 16, 24	
Description	<b>Habit</b>	Trees, up to 35 m high and 4.5 m in girth with greyish brown bark and black, acrid exudation.
	<b>Leaves</b>	Simple, 7.5-15 cm x 2.5-5 cm, spatulate, coriaceous, thick, subsessile, crowded at the ends of branchlets, cuneate at base, obtuse at apex.
	<b>Flowers</b>	Cream-coloured, about 0.8 cm across, borne in axillary or terminal panicles; calyx spathaceous, splitting irregularly.
	<b>Fruits and seeds</b>	Drupe about 3.75 cm in diameter, depressed-globose with tough and rough shell, single seeded; seeds adherent to the pericarp.
Flowers and fruits	February - May; May - June	
Notes	Seeds germinate by about 60-90 per cent. Field-planted seedlings attain an average height of 133 cm with in a period of 2.5 years.	



<b>83. <i>Gmelina arborea</i> Roxb.</b>		
<b>Family</b>	Verbenaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Kumizhu, Kumbil	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	18.11.2003; 26.08.2004	
<b>Accession number(s)</b>	KFRI-AB 1271 to KFRI-AB 1277; KFRI-AB 1279 to KFRI-AB 1289; KFRI-AB 1957 to KFRI-AB 1964	
<b>Quadrant number(s)</b>	30, 34, 35, 36	
<b>Description</b>	<b>Habit</b>	Deciduous trees up to 18 m high with smooth, grey or yellowish-grey, lenticellate bark and fulvous tomentose young shoots.
	<b>Leaves</b>	Simple, alternate, 7-25 x 6-20 cm, broadly ovate, coriaceous, entire, glabrous above and fulvous tomentose below, truncate at base, acute to acuminate at apex.
	<b>Flowers</b>	Yellow with orange-pink shade in terminal long panicles, 4 - 4.5 cm long.
	<b>Fruits and seeds</b>	Drupes greenish-yellow, 3.5 x 2 cm, ovoid, pulpy; seeds 2-4, elliptic.
<b>Flowers and fruits</b>	January- April.	
<b>Notes</b>	Seeds germinate by about 85 per cent. Field-planted seedlings attain an average height of 536 cm with in a period of 4.5 years.	

<b>84. <i>Grewia tiliifolia</i> Vahl</b>		
<b>Family</b>	Tiliaceae	
<b>Basionym/synonym(s)</b>	<i>Grewia leptopetala</i> Brandis	
<b>Local name(s)</b>	Chadachi, Dhanauna-vriksham, Unnam	
<b>Distribution</b>	Tropical Africa, India to Indo-China	
<b>Source locality(s)</b>	Natural stand	
<b>Date(s) of planting</b>	Not planted	
<b>Accession number (s)</b>	KFRI-AB 604; KFRI-AB 609 to KFRI-AB 626	
<b>Quadrant number(s)</b>	2, 20, 23, 24, 27, 33, 35, 42, 43, 52, 60, 63, 64, 71, 77, 79	
<b>Description</b>	<b>Habit</b>	Trees, up to 25m high with brown, rough, vertically striated bark and pubescent young shoots.
	<b>Leaves</b>	Simple, 6-36 x 3-24 cm, ovate, crenate-dentate glabrescent above and hoary pubescent below, unequally cordate at base, acuminate at apex.
	<b>Flowers</b>	White with yellow anthers, in axillary umbels, up to 1 cm long.
	<b>Fruits and seeds</b>	Drupes reddish-purple, about 0.5 cm long, globose or 2-lobbed, smooth, sparsely hairy; seeds 2, spuriously septate between seeds.
<b>Flowers and fruits</b>	February -April	
<b>Notes</b>	The seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 25 cm with in a period of 9 months.	

**85. *Gynacranthera farquhariana* (Hook. f. et Thoms.) Warb.**

<b>Family</b>	<b>Myristicaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Myristica farquhariana</i> Hook. f. et Thoms.; <i>M. canarica</i> Bedd. ex King	
<b>Local name(s)</b>	Undappayin	
<b>Distribution</b>	Indo-Malaya	
<b>Source locality(s)</b>	Kulathupuzha (Kollam)	
<b>Date(s) of planting</b>	28.03.2006	
<b>Accession number(s)</b>	KFRI-AB-2888, KFRI-AB-1094, KFRI-AB-3318, KFRI-AB-2506, KFRI-AB-2526, KFRI-AB-2527, KFRI-AB-2998, KFRI-AB-2988, KFRI-AB-2993, KFRI-AB-2222, KFRI-AB-1262, KFRI-AB-2591, KFRI-AB-2410, KFRI-AB-1266, KFRI-AB-1267.	
<b>Quadrant number(s)</b>	39, 40, 41, 46	
<b>Description</b>	<b>Habit</b>	Trees, 20-25 m high with brown, smooth bark, red inside with red exudation and brown, densely pubescent branchlets.
	<b>Leaves</b>	Simple, 20-6.5 cm, 14.5-25 x 5-10 cm, oblong, entire, glabrous above, glaucous beneath, rounded at base, acute at apex.
	<b>Flowers</b>	Orange yellow, dioecious; male flowers in axillary panicles; female flowers with 1-loculed ovary and sessile stigma.
	<b>Fruits and seeds</b>	Capsules, globose or ovoid, up to 2 cm in diameter with thick fleshy pericarp, one seeded; seeds globose, brown, fatty.
<b>Flowers and fruits</b>	March - April	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 57 cm with in a period of 2 years.	

**86. *Haldina cordifolia* (Roxb.) Ridsd.**

<b>Family</b>	<b>Rubiaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Nauclea cordifolia</i> Roxb.; <i>Adina cordifolia</i> Roxb.	
<b>Local name(s)</b>	Manjakadambu, Malamkadambu	
<b>Distribution</b>	India, Myanmar, Sri Lanka, Indo-China	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	23.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2365 to KFRI-AB 2368; KFRI-AB 2370; KFRI-AB 2372; KFRI-AB 2375; KFRI-AB 2377; KFRI-AB 2379; KFRI-AB 2381 to KFRI-AB 2389	
<b>Quadrant number(s)</b>	19, 61	
<b>Description</b>	<b>Habit</b>	Trees, 15 to 20 m high with buttressed bole, brownish grey thick, furrowed bark and pubescent young parts.
	<b>Leaves</b>	Simple, 8-22 cm long, orbicular, almost glabrous above, densely pubescent beneath, cordate or subcordate at base, shortly acuminate at apex.
	<b>Flowers</b>	Yellow in globose heads, 1.5-2 cm in diameter, axillary, 1-3 together with 2-5 cm long, mixed with many filiform bracteoles, stout peduncles.
	<b>Fruits and seeds</b>	Capsules 0.2-0.4 cm long, cuneate, densely downy with about 8 seeds in each locule; seeds with bifid wing on one end.
<b>Flowers and fruits</b>	June - August; October - March	
<b>Notes</b>	Seeds germinate by about 70 per cent. Field-planted seedlings attain an average height of 259 cm with in a period of 2.5 years.	

<b>87. <i>Harpullia arborea</i> (Blanco) Radlk.</b>		
<b>Family</b>	Sapindaceae	
<b>Basionym/synonym(s)</b>	<i>Ptelea arborea</i> Blanco; <i>Harpullia imbricata</i> (Bl.)Thw.; <i>H. cupanoides</i> Hiern	
<b>Local name(s)</b>	Puzhukkolli, Chittilamadakku	
<b>Distribution</b>	Indo-Malesia, Australia	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	21.06.2005; 31.01.2006	
<b>Accession number (s)</b>	KFRI-AB 2003 to KFRI-AB 2015; KFRI-AB 2017 to KFRI-AB 2027; KFRI-AB 3743 to KFRI-AB 3747	
<b>Quadrant number(s)</b>	22, 27, 31, 32	
<b>Description</b>	<b>Habit</b>	Trees, 10-15 m high with a straight trunk; bark about 0.3 cm thick, pale grey, smooth and finely fulvous-pubescent young branches.
	<b>Leaves</b>	Paripinnate, 10-20 cm long; leaflets 4-5 pairs, opposite or alternate, 6-13.5 x 2-4.5 cm, oblong-lanceolate, entire, glabrous, bright green, obtuse at base, obtusely acuminate at apex.
	<b>Flowers</b>	Yellowish-green, polygamodioecious, in lax drooping, axillary panicles with long pedicels.
	<b>Fruits and seeds</b>	Capsules bright orange, inflated, 10 cm across, broadly reniform, compressed; seeds ovoid, black, bearing small, disciform aril.
<b>Flowers and fruits</b>	November - January	
<b>Notes</b>	Field-planted seedlings attain an average height of 240 cm with in the period of 2.5 years.	

<b>88. <i>Holigarna arnottiana</i> Hook. f.</b>		
<b>Family</b>	Anacardiaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Cheru	
<b>Distribution</b>	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Chimmony (Thrissur)	
<b>Date(s) of planting</b>	10.08.2005	
<b>Accession number (s)</b>	KFRI-AB 3642 to KFRI-AB 3646	
<b>Quadrant number(s)</b>	32	
<b>Description</b>	<b>Habit</b>	Trees 12-15 m high with smooth, pale brown bark, dull red inside with milky latex and tomentose branchlets.
	<b>Leaves</b>	Simple, crowded at the tip of the branchlets, 12-28 x 4.5-9.5 cm, obovate or oblanceolate, entire, glabrous, paler beneath, decurrent into the petiole at base, acute or rounded at the apex.
	<b>Flowers</b>	Yellowish-white, polygamious, minute, crowded in ruffous, tomentose terminal panicles.
	<b>Fruits and seeds</b>	Drupes dark purple, up to 2.5 cm long, obliquely ovoid, rounded at apex, long pedicelled, partly enclosed in the accrescent, resinous; seeds parietal.
<b>Flowers and fruits</b>	January - February; April - May	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 299 cm with in a period of 2.5 years.	

<b>89. <i>Holoptelea integrifolia</i> (Roxb.) Planch.</b>		
<b>Family</b>	Ulmaceae	
<b>Basionym/synonym(s)</b>	<i>Ulmus integrifolius</i> Roxb.	
<b>Local name(s)</b>	Aaval	
<b>Distribution</b>	South and South-East Asia	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	25.08.2004; 25.06.2005	
<b>Accession number(s)</b>	KFRI-AB 1938; KFRI-AB 1947; KFRI-AB 3528; KFRI-AB 3527	
<b>Quadrant number(s)</b>	16, 17, 21, 24, 25, 29, 52, 62	
<b>Description</b>	<b>Habit</b>	Trees, 30-35 m high and up to 3 m in girth; bark whitish-grey and young shoots and inflorescence pubescent.
	<b>Leaves</b>	Simple, 6-12.5 x 2.5-6.5 cm, elliptic-ovate, entire, subcoriaceous, cordate or oblique at base, acuminate at apex.
	<b>Flowers</b>	Greenish purple, bisexual or polygamous in dense lateral racemes or fascicles on leafless branches; female flowers with long pedicels.
	<b>Fruits and seeds</b>	Samaras oval or suborbicular with membranous wing and a long, slender stalk; seeds single, flat 3 cm x 2.33 cm.
<b>Flowers and fruits</b>	February - April; April - June	
<b>Notes</b>	Seeds germinate by about 64 per cent. Field-planted seedlings attain an average height of 335 cm with in a period of 3.5 years.	

<b>90. <i>Hopea parviflora</i> Bedd.</b>		
<b>Family</b>	Dipterocarpaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Thambakam, Irumbakam, Kambakam	
<b>Distribution</b>	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Nilambur (Malappuram)	
<b>Date(s) of planting</b>	15.11.2003	
<b>Accession number(s)</b>	KFRI-AB 1151 to KFRI-AB 1166	
<b>Quadrant number(s)</b>	12, 17, 20, 55	
<b>Description</b>	<b>Habit</b>	Trees, up to 40 m high and trunk up to 1.5 m in girth with brown rough flaking bark and reddish brown, glaucous branchlets.
	<b>Leaves</b>	Simple, 3.5-11.5 x 3-5 cm, oblong or ovate lanceolate, glabrous above and paler beneath, undulated along the margins, cordate or subcordate at base, acuminate at apex.
	<b>Flowers</b>	Creamy yellow, fragrant in green, tomentose panicles of unilateral racemes.
	<b>Fruits and seeds</b>	Samaras two-winged, straw-coloured, less than 5 cm long, remaining green even when fully ripe; seed 1, ovoid with fleshy cotyledon.
<b>Flowers and fruits</b>	January - February; May - June	
<b>Notes</b>	Seeds germinate by about 84 per cent. Field-planted seedlings attain an average height of 382 cm with in a period of 4.5 years.	

<b>91. <i>Hopea racophloea</i> Dyer</b>		
<b>Family</b>	<b>Dipterocarpaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Hopea malabarica</i> Bedd.	
<b>Local name(s)</b>	Naduvalippongu, Naikambakam, Thondupoliyan-pongu	
<b>Distribution</b>	Western Ghats of India ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Nilambur (Malappuram)	
<b>Date(s) of planting</b>	3.12.2003; 26.05.2004	
<b>Accession number(s)</b>	KFRI-AB 1393 to KFRI-AB 1398; KFRI-AB 1400; KFRI-AB-1404 to KFRI-AB 1406; KFRI-AB-1408 to KFRI-AB 1428	
<b>Quadrant number(s)</b>	55, 56	
<b>Description</b>	<b>Habit</b>	Trees, 15-20 m high with resinous bark peeling off in strips and brown branchlets; echniate galls common.
	<b>Leaves</b>	Simple, 8-9.5 x 5-5.5 cm, lanceolate, entire with 4-5 pairs of nerves, glabrous above, reddish brown beneath, obtuse at base, acute or acuminate at apex.
	<b>Flowers</b>	Pinkish yellow, shortly pediceled, 2-4 together in lax unilateral, glabrous, axillary, paniculate racemes, exceeding the leaves.
	<b>Fruits and seeds</b>	Samaras reddish, 2-winged with wings up to 4.5 x 2 cm, oblong, thickened and gibbous, indehiscent; seeds 1, ovoid with fleshy cotyledon.
<b>Flowers and fruits</b>	January - February; May- June	
<b>Notes</b>	Field-planted seedlings attain an average height of 204 cm with in a period of 4.5 years.	

<b>92. <i>Humboldtia bourdillonii</i> Prain</b>		
<b>Family</b>	<b>Caesalpiniaceae</b>	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Adimundan	
<b>Distribution</b>	Southern Western Ghats of India ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Periyar Tiger Reserve (Idukki)	
<b>Date(s) of planting</b>	28.07.2007	
<b>Accession number(s)</b>	KFRI-AB 2184, KFRI-AB 2192, KFRI-AB 2182, KFRI-AB 2178, KFRI-AB 2200	
<b>Quadrant number(s)</b>	4,8	
<b>Description</b>	<b>Habit</b>	Evergreen trees, up to 15 m high, bark reddish brown smooth, branchlets brown, glabrous.
	<b>Leaves</b>	Imparipinnate, with lateral stipules and winged petiole; leaflets 6-12, opposite, estipulate, 7.5-25x1.5-6cm, oblong-lanceolate, linear-lanceolate, entire, glabrous, unequally obtuse at base, acuminate at apex.
	<b>Flowers</b>	Pinkish in corymbs on tubercles of old branches, tawny velvety with petals pink having white veins.
	<b>Fruits and seeds</b>	Pods flat, oblong, velvety brown pubescent, bright red crimson, dehiscent with valves prominently veined; seeds 3-5, black.
<b>Flowers and fruits</b>	December - July	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 95 cm with in a period of 1 year.	

<b>93. <i>Humboldtia vahliana</i> Wt.</b>		
<b>Family</b>	Caesalpiniaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Karappongu, Kurappunna, Korathi	
<b>Distribution</b>	Peninsular India in the Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	22.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2179 to KFRI-AB 2181; KFRI-AB 2183, KFRI-AB 2185 to KFRI-AB 2191; KFRI-AB 2193 to KFRI-AB 2199; KFRI-AB 2201; KFRI-AB 2202	
<b>Quadrat number(s)</b>	4, 8	
<b>Description</b>	<b>Habit</b>	Trees, up to 15 m high with, rough, dark brown bark mottled with white and sometimes zig zag branchlets.
	<b>Leaves</b>	Paripinnate, up to 30 cm long; leaflets 3-4 pairs, oblong-lanceolate, glabrous, appendages reniform; terminal leaflet up to 20 x 5.5 cm, obtuse at base, acuminate at apex.
	<b>Flowers</b>	White, many flowered in axillary brown velvety, racemes, about 2.5 cm across.
	<b>Fruits and seeds</b>	Pods up to 15 x 45 cm, oblong, compressed, adpressed, reddish-brown tomentose, reticulate; seeds three to four, glabrous.
<b>Flowers and fruits</b>	February - April	
<b>Notes</b>	Field-planted seedlings attain an average height of 130 cm with in a period of 2.5 years.	

<b>94. <i>Hydnocarpus pentandra</i> (Buch.-Ham.) Oken</b>		
<b>Family</b>	Flacourtiaceae	
<b>Basionym/synonym(s)</b>	<i>Chilmoria pentandra</i> Buch.-Ham.; <i>H. laurifolia</i> (Dennst.) Sleum.	
<b>Local name(s)</b>	Marotti, Neer-vetti	
<b>Distribution</b>	Western Ghats of Peninsular India ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	27.05.2004; 28.06.2005	
<b>Accession number(s)</b>	KFRI-AB 1491 to KFRI-AB 1505; KFRI-AB 3572 to KFRI-AB 3581	
<b>Quadrat number(s)</b>	61, 71	
<b>Description</b>	<b>Habit</b>	Trees, 15-20 m high with buttressed trunk, spreading crown and twiggy, glabrous, brown, pubescent branchlets.
	<b>Leaves</b>	Simple, 8-20 x 4-7.5 cm, ovate, elliptic or lanceolate, entire or obscurely serrate, glabrous, thinly coriaceous, rounded or acute at the base, acuminate at apex.
	<b>Flowers</b>	Greenish yellow, unisexual in solitary or few-flowered axillary cymes or fascicles, up to 1 cm long.
	<b>Fruits and seeds</b>	Berries brown, tomentose when young, 4-6 cm across, globose with woody stalk, dark grey, obtusely angular, blunt at apex; seeds 18-20, yellowish, angular.
<b>Flowers and fruits</b>	February - March or extending to July - August; October - April	
<b>Notes</b>	Field-planted seedlings attain an average height of 312 cm with in a period of 3.5 years.	

<b>95. <i>Ixora brachiata</i> Roxb. ex DC.</b>		
<b>Family</b>	Rubiaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Marachethi	
<b>Distribution</b>	Peninsular India in the Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Chinnar (Idukki)	
<b>Date(s) of planting</b>	23.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2315 to KFRI-AB 2322; KFRI-AB 2324 to KFRI-AB 2330	
<b>Quadrant number(s)</b>	3, 6	
<b>Description</b>	<b>Habit</b>	Trees 4-6 m high with smooth grey bark, dense crown and glabrous branchlets.
	<b>Leaves</b>	Simple, opposite, decussate, 6-12.5 x 3-5 cm, elliptic oblong or lanceolate, glabrous, pale when dry, acuminate at base, obtuse at apex.
	<b>Flowers</b>	White, fragrant, in 2-3 pairs on sessile or shortly peduncled cymes. Flower buds globose; corolla tube with out hairs in the mouth
	<b>Fruits and seeds</b>	Berries purplish black, globose or didymous, less than 0.5cm in diameter; seeds hemispheric with deep pit on the ventral side.
<b>Flowers and fruits</b>	November- April.	
<b>Notes</b>	Field-planted seedlings attain an average height of 160 cm with in a period of 2.5 years.	

<b>96. <i>Kingiodendron pinnatum</i> (Roxb.) Harms.</b>		
<b>Family</b>	Caesalpiniaceae	
<b>Basionym/synonym(s)</b>	<i>Hardwickia pinnata</i> Roxb.	
<b>Local name(s)</b>	Kulavu, Kiyavu, Ennapayin	
<b>Distribution</b>	Peninsular India in the Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	22.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2203, KFRI-AB 2210 to KFRI-AB 2212, KFRI-AB 2215, KFRI-AB 2217 to KFRI-AB 2221; KFRI-2223; KFRI-2224,	
<b>Quadrant number(s)</b>	26, 31	
<b>Description</b>	<b>Habit</b>	Trees, 15-30 m high up to 1 m in girth and spreading branches with thick, smooth, greyish brown bark having green blotches and a reddish resinous exudation.
	<b>Leaves</b>	Abruptly pinnate with only one pair of leaflets; leaflets 2-6.5x1-3.5 cm, ovate-lanceolate, oblong, tinged red when young, entire, glabrous, 3-6 nerved from base, acuminate at apex.
	<b>Flowers</b>	White in axillary or terminal paniculate racemes with filiform pedicels.
	<b>Fruits and seeds</b>	Pods 4-7cm long, ovate-ellipsoid, glabrous, veined, narrowed at both ends, opening at apex, one-seeded; seeds pendulous.
<b>Flowers and fruits</b>	January- March, sometimes extending to July; May and October	
<b>Notes</b>	Seeds germinate by about 85 per cent. Field-planted seedlings attain an average height of 79 cm with in a period of 2.5 years.	

<b>97. Lagerstroemia microcarpa Wt.</b>		
Family	Lythraceae	
Basionym/synonym(s)	<i>L. lanceolata</i> Wall. ex Clarke.; <i>L. thomsonii</i> Koehne.	
Local name(s)	Vellilavu, Venthekku	
Distribution	Peninsular India in the Western Ghats ( <b>Endemic</b> )	
Source locality(s)	Natural stand and planted; Peechi (Thrissur)	
Date(s) of planting	23.06.2005	
Accession number(s)	KFRI-AB 802, KFRI-AB 803; KFRI-AB 2515; KFRI-AB 2515; KFRI-AB 2517; KFRI-AB 2521; KFRI-AB 2523 to KFRI-AB 2529; KFRI-AB 2531 to KFRI-AB 2532; KFRI-AB 2534; KFRI-AB 2536 to KFRI-AB 2539	
Quadrant number(s)	10,24,29, 27,28,32,33,37	
Description	<b>Habit</b>	Trees, up to 30 m high with greyish-white or yellowish-grey, smooth bark, peeling off as long linear flake and knotted branches.
	<b>Leaves</b>	Simple, distichus, up to 11 x 4.5 cm, elliptic, glabrous above, glaucous below, attenuate at base, acute or acuminate at apex.
	<b>Flowers</b>	Pinkish-white in axillary, paniculate racemes, upto 1 cm across.
	<b>Fruits and seeds</b>	Capsules ellipsoid, up to 1 cm long, 4-valved; seeds many, winged, brownish.
Flowers and fruits	June - February	
Notes	Seeds germinate by about 20 per cent. Field-planted seedlings attain an average height of 225cm with in a period of 3.5 years.	

<b>98. Lagerstroemia speciosa (L.)Pers.</b>		
Family	Lythraceae	
Basionym/synonym(s)	<i>Lagerstoemia flos-reginae</i> Retz.; <i>L. reginae</i> Roxb.; <i>L. hirsuta</i> (Lam.) Willd.	
Local name(s)	Manimaruthu, Poomaruthu	
Distribution	Indo-Malesia	
Source locality(s)	Peechi (Thrissur)	
Date(s) of planting	23.06.2005	
Accession number(s)	KFRI-AB 3322 to KFRI-AB 3334	
Quadrant number(s)	69, 72, 74, 76, 76	
Description	<b>Habit</b>	Trees up to 20 m high with pale, smooth, flaking bark and widely spreading branches.
	<b>Leaves</b>	Simple, 8-18.5 x 3-8 cm, oblong-lanceolate or elliptic, glabrous, finely reticulate on both sides, acute or rounded at base, subacute at apex.
	<b>Flowers</b>	Mauve to pink, in axillary or terminal pubescent panicles, upto 30 cm long.
	<b>Fruits and seeds</b>	Capsules up to 2.5 x 2 cm, ellipsoid or subglobose, minutely apiculate; seeds glabrous, pale brown, woody, winged.
Flowers and fruits	March - June; November- January	
Notes	Seeds germinate by 14 -90 per cent. Field-planted seedlings attain an average height of 155 cm with in a period of 4.5 years.	



<b>99. <i>Lanea coromandelica</i> (Houtt.) Merr.</b>		
<b>Family</b>	<b>Anacardiaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Dialium coromandelium</i> Houtt.	
<b>Local name(s)</b>	Kalasu	
<b>Distribution</b>	Indo-Malesia, China	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	28.07.2007	
<b>Accession number(s)</b>	KFRI-AB 1766, KFRI-AB 2667, KFRI-AB 2672, KFRI-AB 2673	
<b>Quadrat number(s)</b>	68, 69	
<b>Description</b>	<b>Habit</b>	Tress, up to 25 m high with bark grey to dark brown, roughy exfoliating in small irregular flakes and gummy, red exudation.
	<b>Leaves</b>	Imparipinnate, clustered at the ends of the branchlets; leaflets 7-11, without intermarginal nerves, opposite, pubescent, 5-12 x 3-8 cm, oblong or oblong-ovate, entire, puberulent beneath, oblique at base, acuminate at apex.
	<b>Flowers</b>	Yellowish green, unisexual; male flowers in compound racemes; female flowers in simple racemes.
	<b>Fruits and seeds</b>	Drapes red, about 1.2 cm long, ovoid with hard stone; seeds compressed.
<b>Flowers and fruits</b>	January - May	
<b>Notes</b>	Seeds germinate by about 43- 65 per cent. Field-planted seedlings attain an average height of 65 cm with in a period of 1 year.	

<b>100. <i>Leucaena leucocephala</i> (Lamk.) de Wit.</b>		
<b>Family</b>	<b>Mimosaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Mimosa leucocephala</i> Lamk.; <i>Leucaena glauca</i> Benth.	
<b>Local name(s)</b>	Ippilippil, Subaul	
<b>Distribution</b>	Native of tropical America, Pantropical	
<b>Source locality(s)</b>	Natural stand	
<b>Date(s) of planting</b>	Not Planted	
<b>Accession number(s)</b>	KFRI-AB 804 & KFRI-AB 805	
<b>Quadrat number(s)</b>	44	
<b>Description</b>	<b>Habit</b>	Shrubs or small trees, 2-8 m high with puberulous branchlets.
	<b>Leaves</b>	Bipinnate, up to 15 cm long with channeled rachis and 3-6 pairs of pinnae; leaflets 10-15 pairs, up to 0.4 x 0.2 cm, linear-oblong, membranous, glaucous, oblique at base, acute at apex.
	<b>Flowers</b>	Greenish-white, sessile in dense globose heads with slender, up to 3 cm long, pubescent peduncles.
	<b>Fruits and seeds</b>	Pods 10-13 x 0.8-1.5 cm, straight, flat, stalked, glabrous, obliquely angular at apex, narrowed at base; seeds 15-20 per pod, brown, glossy.
<b>Flowers and fruits</b>	November - May	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 450 cm with in a period of 1 year.	

<b>101. <i>Litsea coriacea</i> (Heyne ex Meisner) Hook.f.</b>		
<b>Family</b>	<b>Lauraceae</b>	
<b>Basionym/synonym(s)</b>	<i>Tetranthera coriacea</i> Heyne ex Meisner	
<b>Local name(s)</b>	Maravettithali, Pannithali, Vettithali	
<b>Distribution</b>	Peninsular India ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	17.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3261 to KFRI-AB 3279; KFRI-AB 3689 to KFRI-AB 3693	
<b>Quadrat number(s)</b>	14	
<b>Description</b>	<b>Habit</b>	Trees up to 12 m high with pale brown, thinly scaly bark and glabrous, slender branchlets.
	<b>Leaves</b>	Simple, up to 16 x 5 cm, oblong or narrowly elliptic, coriaceous, glabrous and glossy above, slightly puberulous beneath, acute at base, acuminate at apex.
	<b>Flowers</b>	Dull white, unisexual, in 4 flowered axillary, sessile crowded umbels with finely silky to tomentose, funnel shaped perianth tube.
	<b>Fruits and seeds</b>	Berries greenish white subtended by the cupular perianth; seed one with thin testa.
<b>Flowers and fruits</b>	December - January	
<b>Notes</b>	Field-planted seedlings attain an average height of 172 cm with in a period of 2.5 years.	

<b>102. <i>Mastixia arborea</i> (Wt.) Bedd.</b>		
<b>Family</b>	<b>Cornaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Mastixia meziana</i> Wang.; <i>M. pentandra sensu</i> Clarke	
<b>Local name(s)</b>	Neerkurunnu, Vella-adambu, kattukarppuram	
<b>Distribution</b>	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Chinnar (Idukki)	
<b>Date(s) of planting</b>	18.06.2005; 31.01.2006	
<b>Accession number(s)</b>	KFRI-AB 3190; KFRI-AB 3191; KFRI-AB 3193 to KFRI-AB 3195; KFRI-AB 3203; KFRI-AB 3647 to KFRI-AB 3651	
<b>Quadrat number(s)</b>	25, 29, 30, 31	
<b>Description</b>	<b>Habit</b>	Trees 10-12 m high with greyish smooth, shallowly fissured bark and quadrangular ferruginous-pubescent branchlets.
	<b>Leaves</b>	Simple, 7.5-14.5 x 4.5-6 cm, elliptic oblong, puberulous beneath, unequal sided at base, obtusely acuminate at apex with prominent glands on either side of the mid rib beneath.
	<b>Flowers</b>	Greenish yellow, numerous in terminal corymbose, rusty tomentose, panicles, articulated with bracteolate pedicels.
	<b>Fruits and seeds</b>	Drupes purplish green, 2.5-3 cm long, ellipsoid or ovoid, aeriolate at apex; 1 seeded; seeds ellipsoid.
<b>Flowers and fruits</b>	January - May	
<b>Notes</b>	Field-planted seedlings attain an average height of 199 cm with in a period of 2.5 years.	

<b>103. <i>Melia dubia</i> Cav.</b>		
<b>Family</b>	<b>Meliaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Melia composita</i> Willd.; <i>M. robusta</i> Roxb.; <i>M. superba</i> Roxb.	
<b>Local name(s)</b>	Malaveppu, Kattuveppu	
<b>Distribution</b>	South-East Asia, Australia	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	03.12.2003	
<b>Accession number(s)</b>	KFRI-AB 1386 to KFRI-AB 1392	
<b>Quadrant number(s)</b>	40, 41	
<b>Description</b>	<b>Habit</b>	Trees up to 20 m high with bark 0.6-0.8 cm thick, dark brown rough; young branches densely clothed with stellate pubescence, ultimately glabrous.
	<b>Leaves</b>	Bipinnate or tripinnate, 20-75 cm long; leaflets 2-7.5 x 0.6-3.8 cm, mostly ovate-lanceolate, attenuate, stipulate, acute or rounded at base, acute or acuminate at apex.
	<b>Flowers</b>	Greenish white, fragrant, 0.6-1.0 cm long, in many flowered, branched panicles, shorter than the leaves.
	<b>Fruits and seeds</b>	Drapes yellowish, 2-4 x 1.8-2.3 cm, ovoid or ellipsoid, fleshy and smooth with hard endocarp; seeds 1-4, black, smooth, pointed.
<b>Flowers and fruits</b>	February - March; October - February	
<b>Notes</b>	Seeds germinate by about 17 per cent. Field-planted seedlings attain an average height of 410 cm with in a period of 4.5 years.	

<b>104. <i>Melicope lunu-ankenda</i> (Gaertn.) Hartley</b>		
<b>Family</b>	<b>Rutaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Euodia lunu-ankenda</i> (Gaertn.) Merr.	
<b>Local name(s)</b>	Kambili	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Parambikulam (Palakkad)	
<b>Date(s) of planting</b>	23.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2557 to KFRI-AB 2559	
<b>Quadrant number(s)</b>	32	
<b>Description</b>	<b>Habit</b>	Trees, up to 18 m high with corky, yellowish grey bark and pubescent, opposite branchlets.
	<b>Leaves</b>	Imparipinnate, 3-foliolate; leaflets 4.5-11.5 x 2.5-6 cm, oblong, ellucid dotted, glabrous, entire, narrowed at base, acuminate at apex.
	<b>Flowers</b>	Greenish white, unisexual in small dense, axillary, bracteate cymes.
	<b>Fruits and seeds</b>	Capsules with cocci, 2-valved, 1-seeded; seeds black, globose, hard, polished and shiny.
<b>Flowers and fruits</b>	June - July; October - December	
<b>Notes</b>	Field-planted seedlings attain an average height of 312 cm with in a period of 2.5 years.	

<b>105. <i>Memecylon lawsonii</i> Gamble</b>		
<b>Family</b>	Melastomataceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Not Known	
<b>Distribution</b>	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	22.12.2005	
<b>Accession number(s)</b>	KFRI-AB 3652 to KFRI-AB 3654	
<b>Quadrat number(s)</b>	14	
<b>Description</b>	<b>Habit</b>	Stunted trees, up to 4 m high with terete, thick branchlets.
	<b>Leaves</b>	Simple, up to 15 x 4.5 cm, ovate or oblong-lanceolate, margins slightly thickened, acute at base, acuminate at apex.
	<b>Flowers</b>	Blue in axillary clusters of 2 or 3 with toothed calyx and obovate petals.
	<b>Fruits and seeds</b>	Berries yellow, globose, 0.71-1cm across, crowned by the calyx lobes; seed one, large.
<b>Flowers and fruits</b>	October - March	
<b>Notes</b>	Field-planted seedlings attain an average height of 118cm within a period of 2.5 years.	

<b>106. <i>Memecylon umbellatum</i> Burm. f.</b>		
<b>Family</b>	Melastomaceae	
<b>Basionym/synonym(s)</b>	<i>M. edule</i> Roxb.	
<b>Local name(s)</b>	Aanakombi	
<b>Distribution</b>	Peninsular India, Sri Lanka	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	23.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3424 to KFRI-AB 3432; KFRI-AB 3434 to KFRI-AB 3448; KFRI-AB 3742	
<b>Quadrat number(s)</b>	13, 14	
<b>Description</b>	<b>Habit</b>	Stunted trees, 4-6 m high with young branches terete and pale when dry.
	<b>Leaves</b>	Simple, 3-6.5x1.5-3.5 cm, elliptic or ovate, glabrous, polished above, pale beneath, slightly revolute along the margins, acuminate or rounded at base, subacute or bluntly acuminate at apex.
	<b>Flowers</b>	Bright blue in umbellate cymes, from the axils of fallen leaves with thick peduncles, elongated in fruits.
	<b>Fruits and seeds</b>	Berries purplish black, globose, less than 0.5 cm in diameter, crowned by the persistent calyx; seed one, large.
<b>Flowers and fruits</b>	March - April; May - July	
<b>Notes</b>	Field-planted seedlings attain an average height of 119 cm within a period of 2.5 years.	

<b>107. <i>Mesua ferrea</i> L.</b>		
<b>Family</b>	<b>Guttiferae/Clusiaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Mesua roxburghii</i> Wt.; <i>M. nagana</i> Gard.; <i>M. nagassarium sensu</i> Kosterm.	
<b>Local name(s)</b>	Churuli, Nanku, Nagapoovu, Vayanavu	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Chinnar (Idukki)	
<b>Date(s) of planting</b>	23.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2415 to KFRI-AB 2439	
<b>Quadrant number(s)</b>	1, 2, 41	
<b>Description</b>	<b>Habit</b>	Trees, 25-30 m high and up to 1.5 m in girth with straight trunk, ash coloured and smooth bark and twiggy branchlets; exudation colourless, aromatic.
	<b>Leaves</b>	Simple, opposite, 4.5-12 x 2-3 cm, oblong lanceolate, red when young, glaucous beneath, rounded or acute at base, acute or acuminate at apex.
	<b>Flowers</b>	White, fragrant, up to 4 cm across, subsessile, 1-3 together on short axillary or terminal, peduncles. Sepals 2 fleshy concave, velvety puberulous, persistent; corolla curled and eose at margins.
	<b>Fruits and seeds</b>	Capsules 2-3 cm long, ovoid, surrounded by enlarged sepals; seeds 1-4 smooth, brown.
<b>Flowers and fruits</b>	February - June; April - August	
<b>Notes</b>	Seeds germinate by 70 - 95 per cent. Field-planted seedlings attain an average height of 75cm with in a period of 2.5 years.	

<b>108. <i>Milusa tomentosa</i> (Roxb.) Sinclair</b>		
<b>Family</b>	<b>Annonaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Uvaria tomentosa</i> Roxb.; <i>Saccopetalum tomentosum</i> (Roxb.) Hook.f. et Thoms.	
<b>Local name(s)</b>	Kanakaitha, Kaithamavu, Thavidi	
<b>Distribution</b>	India, Nepal, Sri Lanka	
<b>Source locality(s)</b>	Natural stand	
<b>Date(s) of planting</b>	Not planted	
<b>Accession number(s)</b>	KFRI-AB-712 to KFRI-AB 720	
<b>Quadrant number(s)</b>	48,55,63,65,71,77	
<b>Description</b>	<b>Habit</b>	Trees, 10-15 m high with pale brown, shallowly fissured bark and branchlets tomentose when young.
	<b>Leaves</b>	Simple, 6.5-15.5 x 5-7.5 cm, ovate-oblong, membranous, entire, glabrous above, pubescent or tomentose beneath when young, rounded or sub acute at base, acute at apex.
	<b>Flowers</b>	Greenish yellow, axillary, solitary or in fascicled racemes, up to 2.5 cm in diameter, on leaf-opposed or sub terminal peduncles.
	<b>Fruits and seeds</b>	Aggregate of berries, purple when ripe, up to 2.5 cm long, stalked, subglobose, tapering towards base, succulent, pubescent; seeds 3-4 in each carpel.
<b>Flowers and fruits</b>	October - May	
<b>Notes</b>	Seeds germinate by 15-18 per cent. Field-planted seedlings attain an average height of 75cm with in a period of 2.5 years.	

<b>109. <i>Mimusops elengi</i> L.</b>		
<b>Family</b>	Sapotaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Elengi	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	17.11.2003; 03.06.2004	
<b>Accession number(s)</b>	KFRI-AB 1232 to KFRI-AB 1236; KFRI-AB 1802 to KFRI-AB 1815; KFRI-AB 3677 to KFRI-AB 3680	
<b>Quadrant number(s)</b>	29, 34, 48	
<b>Description</b>	<b>Habit</b>	Trees 8-12 m high with short trunk, dark brown, longitudinally fissured bark and adpressed, tomentose branchlets.
	<b>Leaves</b>	Simple, alternate or spiral, 5-9 x 2.5-4.5 cm, elliptic, entire, glabrous, acute or rounded at base, shortly acuminate at apex.
	<b>Flowers</b>	Dull white, fragrant, solitary or in fascicles of 2-6 with pubescent, deflexed pedicels.
	<b>Fruits and seeds</b>	Berries yellow when ripe, up to 2.5 cm long, ovoid; seeds brown, solitary ovoid, compressed, shining.
<b>Flowers and fruits</b>	January - May	
<b>Notes</b>	Seeds germinate by about 30-60 per cent. Field-planted seedlings attain an average height of 335 cm with in a period of 2.5 years.	

<b>110. <i>Mitragyna tubulosa</i> (Arn.) Hav.</b>		
<b>Family</b>	Rubiaceae	
<b>Basionym/synonym(s)</b>	<i>Nauclea tubulosa</i> Arn.; <i>Stephegyne tubulosa</i> (Arn.) Hook.f.	
<b>Local name(s)</b>	Naikadambu, Malanthumba	
<b>Distribution</b>	Peninsular India ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	23.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2340 to KFRI-AB 2343; KFRI-AB 2346 to KFRI-AB 2347; KFRI-AB 2354 to KFRI-AB 2357; KFRI-AB 2359 to KFRI-AB 2362; KFRI-AB 2364	
<b>Quadrant number(s)</b>	15, 19, 32	
<b>Description</b>	<b>Habit</b>	Trees, 10-20 m high with greyish bark, horizontal branches and smooth, thin and irregular exfoliations.
	<b>Leaves</b>	Simple, with interpetiolar stipules, up to 20 x 8 cm, entire, glabrous ovate-oblong or ovate, truncate or obtuse at base, acute to acuminate at apex.
	<b>Flowers</b>	Purplish pink in heads, 2-3 2 cm across, terminal and axillary.
	<b>Fruits and seeds</b>	Capsules, yellowish brown, 1-1.5 cm long, separating into two; seeds numerous, minute, winged.
<b>Flowers and fruits</b>	April - October	
<b>Notes</b>	Seeds germinate by about 50-60 per cent. Field-planted seedlings attain an average height of 211 cm with in a period of 2.5 years.	

<b>111. <i>Myristica beddomei</i> King</b>		
<b>Family</b>	<b>Myristicaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Myristica dactyloides</i> auct.	
<b>Local name(s)</b>	Chithirapuvu	
<b>Distribution</b>	Peninsular India ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Kulathupuzha (Kollam)	
<b>Date(s) of planting</b>	18.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3280 to KFRI-AB 3299	
<b>Quadrat number(s)</b>	46, 47	
<b>Description</b>	<b>Habit</b>	Trees, 20-30 m high with thick, blackish green, smooth bark and glabrous branchlets; exudation watery, red.
	<b>Leaves</b>	Simple, 12-20 x 4-6.5 cm, oblong or elliptic-lanceolate, shiny above, dull or glaucous beneath, rounded or abruptly pinnate at base, acute at apex.
	<b>Flowers</b>	White, unisexual; male flowers 10-20 together in axillary cymes with woody peduncles; female flowers sessile in few-flowered cymes.
	<b>Fruits and seeds</b>	Capsules solitary or in pairs, up to 4.5 cm in diameter, subglobose, grooved along one side, apiculate at apex; seeds globose, smooth, red fleshy, arillate.
<b>Flowers and fruits</b>	December - May	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 103 cm with in a period of 2.5 years.	

<b>112. <i>Myristica fatua</i> Houtt.</b>		
<b>Family</b>	<b>Myristicaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Myristica magnifica</i> Bedd.	
<b>Local name(s)</b>	Kotthapanu, Kothappayin	
<b>Distribution</b>	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Kulathupuzha (Kollam)	
<b>Date(s) of planting</b>	28.03.2006	
<b>Accession number(s)</b>	KFRI-AB 1948 to KFRI-AB1950, KFRI-AB 1268 to KFRI-AB 1270, KFRI-AB 3069 to KFRI-AB 3077	
<b>Quadrat number(s)</b>	46,47	
<b>Description</b>	<b>Habit</b>	Evergreen, buttressed trees, 30-35 m high with smooth bark, trunk with aerial roots and pneumatophores, and tomentose young parts.
	<b>Leaves</b>	Simple, 25-40 x 8-18cm, elliptic-lanceolate, glabrous and shiny above, silvery beneath, rounded at base, acute or acuminate at apex.
	<b>Flowers</b>	Unisexual, brown densely tomentose; male flowers in 8-15 flowered clusters in axillary tubercles; female flowers 2-3 in axillary fascicles with ovary sessile, free at the base of perianth.
	<b>Fruits and seeds</b>	Capsules fleshy, solitary or in pairs, up to 9 x 4 cm, ovoid, rufous-puberulous; seeds brown with aril orange.
<b>Flowers and fruits</b>	December - February	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 116 cm with in a period of 2 years.	

<b>113. <i>Neolamarckia cadamba</i> (Roxb.) Bosser</b>		
<b>Family</b>	<b>Rubiaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Nauclea cadamba</i> Roxb; <i>Anthocephalus cadamba</i> (Lamb) A. Rich.; <i>A. indicus</i> A. Dich.	
<b>Local name(s)</b>	Aattuthekku	
<b>Distribution</b>	Asia, Australia, Pacific; often cultivated	
<b>Source locality(s)</b>	Parambikulam (Palakkad)	
<b>Date(s) of planting</b>	24.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2655 to KFRI-AB 2666; KFRI-AB 2668 to KFRI-AB 2671, KFRI-AB 2674; KFRI-AB 2676 to KFRI-AB 2679	
<b>Quadrat number(s)</b>	68, 69	
<b>Description</b>	<b>Habit</b>	Trees, up to 20 m high, bark pale brown vertically shallowly grooved with erect trunk and widely spreading horizontal branches, pubescent when young.
	<b>Leaves</b>	Simple, 10-18 x 5-9.5 cm, elliptic-oblong, coriaceous, entire, glabrous and shiny above, pubescent beneath, rounded or cordate at base, shortly acuminate at apex.
	<b>Flowers</b>	Bisexual, orange-coloured, fragrant, in solitary, terminal globose heads on short peduncles.
	<b>Fruits and seeds</b>	Pyrenes forming a yellow, fleshy, globose mass; seeds few, muriculate, minute.
<b>Flowers and fruits</b>	May - July; August - October	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 308 cm with in a period of 2.5 years.	

<b>114. <i>Nothopegia colebrookeana</i> (Wt.) Bl.</b>		
<b>Family</b>	<b>Anacardiaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Pegia colebrookeana</i> Wt.	
<b>Local name(s)</b>	Chorappala	
<b>Distribution</b>	Peninsular India in the Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Chimmony (Thrissur)	
<b>Date(s) of planting</b>	23.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2560 to KFRI-AB 2570; KFRI-AB 2572 to KFRI-AB 2574; KFRI-AB 2576 to KFRI-AB 2584	
<b>Quadrat number(s)</b>	2, 5, 9	
<b>Description</b>	<b>Habit</b>	Stunted trees, up to 10 m high, with smooth, black bark having white, acrid exudation and pubescent branchlets.
	<b>Leaves</b>	Simple, 6-19.5 x 2.5-6.5 cm, elliptic, oblong, entire, glabrous, decurrent into the petiole at base, acute or acuminate at apex.
	<b>Flowers</b>	Greenish white, polygamous, in axillary rufous, paniculate racemes with persistent tomentose calyx.
	<b>Fruits and seeds</b>	Drupes purple, fleshy, globose, almost 1 cm long, seated on enlarged torus; seed 1, pendulous with membranous testa.
<b>Flowers and fruits</b>	January - March; June - July	
<b>Notes</b>	Field-planted seedlings attain an average height of 118 cm with in a period of 2.5 years.	



115. <i>Olea dioica</i> Roxb.		
Family	Oleaceae	
Basionym/synonym(s)	<i>Picricarya oppositifolia</i> Dennst.; <i>Olea laevis</i> Stokes.	
Local name(s)	Edana, Edala	
Distribution	India	
Source locality(s)	Peechi (Thrissur)	
Date(s) of planting	23.06.2005	
Accession number(s)	KFRI-AB 3362 to KFRI-AB 3363	
Quadrant number(s)	55	
Description	Habit	Trees 6-8 m high with smooth grey bark, shallowly vertically grooved.
	Leaves	Simple, 6-11.5 x 2.5-4.5 cm, elliptic-lanceolate, entire or distantly sharply serrate, glabrous, acute at base, acute or acuminate at apex.
	Flowers	Creamy white, dioecious or polygamous in axillary, extra-axillary or rarely terminal panicles; male panicles larger and denser than the hermaphrodite.
	Fruits and seeds	Drupes purple, 1-2 cm long, ellipsoid, pointed, covered with whitish powdery blue when ripe; seeds ellipsoid, pointed.
Flowers and fruits	November - April	
Notes	Seeds germinate by about 47 per cent. Field-planted seedlings attain an average height of 154 cm with in a period of 2.5 years.	

116. <i>Oroxylum indicum</i> (L.) Benth. ex Kurz		
Family	Bignoniaceae	
Basionym/synonym(s)	<i>Bignonia indica</i> L.; <i>Spathodea indica</i> (L.) Pers.; <i>Calosanthes indica</i> (L.) Bl.	
Local name(s)	Palakapayyani, Payyazhantha, Aralu, Valpathiri	
Distribution	South India, Sri Lanka	
Source locality(s)	Peechi (Thrissur)	
Date(s) of planting	13.11.2003; 23.06.2005	
Accession number(s)	KFRI-AB 3346 to KFRI-AB 3361	
Quadrant number(s)	64, 71, 75	
Description	Habit	Trees, 5-12 m high with smooth bole and light brown, thick bark, dull yellow inside; branches mostly confined towards apex.
	Leaves	2-3 pinnate, up to 1 m long; leaflets 2-4 pairs per pinnae, 5-12 x 4-9 cm, ovate or elliptic, glabrous, rounded or sometimes cordate at base, acuminate at apex.
	Flowers	Reddish purple out side, pinkish yellow with in, numerous, foetid, up to 10 cm long, fleshy in lax terminal paniculate racemes, 25-40 cm long.
	Fruits and seeds	Capsules up to 90 x 7.5 cm, broadly linear, straight, tapering at both ends, flat; seeds numerous, winged, compactly arranged.
Flowers and fruits	July - December	
Notes	Field-planted seedlings attain an average height of 61 cm with in a period of 3.5 years.	

<b>117. <i>Otonephelium stipulaceum</i> (Bedd.) Radlk.</b>		
Family	Sapindaceae	
Basionym/synonym(s)	<i>Nephelema stipulaceum</i> Bedd.	
Local name(s)	Poripoovam, Paviri-mulei	
Distribution	Peninsular India in the Western Ghats ( <b>Endemic</b> )	
Source locality(s)	Peechi (Thrissur)	
Date(s) of planting	23.06.2005	
Accession number(s)	KFRI-AB 3335 to KFRI-AB 3340	
Quadrat number(s)	64, 78	
Description	<b>Habit</b>	Trees, up to 18 m high with thick, pale brown, smooth bark, peeling off as irregular, thin scales.
	<b>Leaves</b>	Paripinnate, alternate; leaflets 3-4 pairs, 18 x 10 cm, obovate or elliptic, glabrous above and glaucous beneath, acuminate at apex, cuneate to obtuse at base.
	<b>Flowers</b>	Creamy yellow, polygamous, in terminal and axillary panicles; calyx cupular
	<b>Fruits and seeds</b>	Drupe covered with small prickles, ellipsoid, about 2.5 x 2 cm in size; seeds smooth, brown.
Flowers and fruits	February - July	
Notes	Field-planted seedlings attain an average height of 125 cm within a period of 2.5 years.	

<b>118. <i>Palaquium ellipticum</i> (Dalz.) Baill.</b>		
Family	Sapotaceae	
Basionym/synonym(s)	<i>Bassia elliptica</i> Dalz.; <i>Dichopsis ellipticum</i> (Dalz.) Benth.	
Local name(s)	Pali, Pachendi, Choppala	
Distribution	Western Ghats of Peninsular India ( <b>Endemic</b> )	
Source locality(s)	Parambikulam (Palakkad)	
Date(s) of planting	15.06.2005	
Accession number(s)	KFRI-AB 3240 to KFRI-AB 3248; KFRI-AB 3250 to KFRI-AB 3259	
Quadrat number(s)	40, 41	
Description	<b>Habit</b>	Trees up to 30 m high with clean trunk and bark brown mottled with white; exudation milky; branches sympodial, glabrous.
	<b>Leaves</b>	Simple, alternate, spiral or clustered towards the tip, 6-10 x 3-5 cm, elliptic or elliptic-obovate, coriaceous, dark green above, pale beneath, glabrous, acute at base, shortly obtuse-acuminate at apex.
	<b>Flowers</b>	White, fragrant, in axillary fascicles on bare branches below the terminal tuft of leaves, solitary or 2-3 together, pubescent or nearly glabrous.
	<b>Fruits and seeds</b>	Berries up to 3 cm long, subacute, glabrous with solitary or rarely two seeds; large brownish testa crustaceous, shining, exalbuminous.
Flowers and fruits	January - March; June - July of next year	
Notes	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 68 cm within a period of 3.5 years.	

**119. *Peltophorum pterocarpum* (DC.) Baker ex Heyne**

<b>Family</b>	<b>Caesalpinaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Inga pterocarpa</i> DC.; <i>P. ferrugineum</i> Benth.	
<b>Local name(s)</b>	Charakkonna	
<b>Distribution</b>	India and Sri Lanka extending to Malayan Peninsula and Australia	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	17.11.2003	
<b>Accession number(s)</b>	KFRI-AB 1212 to KFRI-AB 1220, KFRI-AB 1222 to KFRI-AB 1226	
<b>Quadrant number(s)</b>	19, 23, 28	
<b>Description</b>	<b>Habit</b>	Trees, 12-24 m high and 1-2 m in girth with smooth, grey bark and ferruginous pubescent branchlets.
	<b>Leaves</b>	Bipinnate; pinnae 6-20 pairs, 7.5-15 cm long; leaflets 10-22 pairs, closely arranged, long, sessile, entire, glabrous above, puberulent beneath, truncate at base, obtuse at apex.
	<b>Flowers</b>	Golden yellow, about 2.5 cm long with long ferruginous hairs at the base and back of petals, in large rusty, terminal or lateral racemose panicles.
	<b>Fruits and seeds</b>	Pods brownish, winged, 5-10 cm long and about 2.5 cm broad, oblong, compressed, indehiscent, winged along the sutures, 1-4 seeded; seeds light brown.
<b>Flowers and fruits</b>	March - May and September - December; December - January	
<b>Notes</b>	Seeds germinate by about 70 per cent. Field-planted seedlings attain an average height of 497 cm with in a period of 4.5 years.	

**120. *Phyllanthus emblica* L.**

<b>Family</b>	<b>Euphorbiaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Emblica officinalis</i> Gaertn.	
<b>Local name(s)</b>	Nelli, Gooseberry	
<b>Distribution</b>	Tropics	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	12.11.2003; 26.05.2004	
<b>Accession number(s)</b>	KFRI-AB 1005; KFRI-AB 1007 to KFRI-AB 1021; KFRI-AB 1463 to KFRI-AB 1466	
<b>Quadrant number(s)</b>	24, 25, 65	
<b>Description</b>	<b>Habit</b>	Trees, 6-10 m high with crooked trunk and greenish grey bark, peeling off as conical flakes and glabrous or fine pubescent branchlets.
	<b>Leaves</b>	Simple, bifarious, subsessile, 0.3-1 x 0.1-0.2 cm, glabrous, narrowly linear, oblong or linear oblong, rounded at base, obtuse at apex.
	<b>Flowers</b>	Greenish yellow, unisexual, in axillary fascicles on leaf-bearing branchlets; male flowers many with three stamens; female flowers few, subsessile with 3-loculed ovary.
	<b>Fruits and seeds</b>	Capsule light green, 1-1.5 cm in diameter, fleshy, globose, with three 2-seeded crustaceous cocci; seeds trigonous.
<b>Flowers and fruits</b>	March- June	
<b>Notes</b>	Seeds germinate by about 40 per cent. Field-planted seedlings attain an average height of 298 cm with in a period of 4.5 years.	

<b>121. <i>Polyalthia fragrans</i> (Dalz.) Bedd.</b>		
<b>Family</b>	<b>Annonaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Guatteria fragrans</i> Dalz.	
<b>Local name(s)</b>	Chella. Kodangi, Nedunar	
<b>Distribution</b>	Southern Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Chimmony (Thrissur)	
<b>Date(s) of planting</b>	27.06.2005; 29.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3019 to KFRI-AB 3023; KFRI-AB-3302 to KFRI-AB 3309; KFRI-AB 3311 to KFRI-AB 3320	
<b>Quadrant number(s)</b>	19, 23	
<b>Description</b>	<b>Habit</b>	Trees up to 30 m high with straight bole buttressed at base; bark thick, blackish-grey; horizontal branches and fuscous-tomentose young parts.
	<b>Leaves</b>	Simple, distichus, 10-17.5 x 3.5-8.5cm, elliptic, thin, glabrous above, subglabrous beneath, obtuse or truncate at base, acute, obtuse or acuminate at apex.
	<b>Flowers</b>	Greenish-yellow, fragrant, in solitary or fascicled, few-flowered cymes from tubercles of branches.
	<b>Fruits and seeds</b>	Aggregate of berries, globose or oblong or broadly ovoid, stalked; seed one, orbicular-ovoid.
<b>Flowers and fruits</b>	November- April	
<b>Notes</b>	Field-planted seedlings attain an average height of 140 cm with in a period of 2.5 years.	

<b>122. <i>Polyalthia longifolia</i> (Sonn.) Thw.</b>		
<b>Family</b>	<b>Annonaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Uvaria longifolia</i> Sonn.	
<b>Local name(s)</b>	Aranamaram, Cherunna	
<b>Distribution</b>	Native of tropics; introduced elsewhere	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	13.11.2003; 03.06.2004	
<b>Accession number(s)</b>	KFRI-AB 1057 to KFRI-AB 1059; KFRI-AB 1816 to KFRI-AB 1817	
<b>Quadrant number(s)</b>	12, 48	
<b>Description</b>	<b>Habit</b>	Trees with conical crown, up to 18 m high; bark thick, greyish brown and branches short, narrow and drooping.
	<b>Leaves</b>	Simple, distichous, 8.8-23x2.0-3.8 cm, narrowly lanceolate, wavy along the margins, shiny above, faintly gland-dotted, cuneate at base, acuminate at apex.
	<b>Flowers</b>	Yellowish green, 2.5-3.0 cm long, numerous, in fascicles or umbels from the axils of fallen leaves or tubercles on branches.
	<b>Fruits and seeds</b>	Aggregate of 10-20 berries, yellowish black or deep purple, smooth, shining with woody peduncles and pedicels, one seeded; seeds ovoid, smooth, pale brown.
<b>Flowers and fruits</b>	February - May; July - August	
<b>Notes</b>	Seeds germinate by about 60 per cent. Field-planted seedlings attain an average height of 157 cm with in a period of 4.5 years.	

<b>123. <i>Pongamia pinnata</i> (L.) Pierre.</b>		
<b>Family</b>	<b>Papilionaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Cytisus pinnatus</i> L.; <i>P. glabra</i> Vent.; <i>Derris indica</i> (Lamk.) Bennett	
<b>Local name(s)</b>	Ungu, Pungu	
<b>Distribution</b>	South Asia	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	28.05.2004; 12.11.2003	
<b>Accession number(s)</b>	KFRI-AB 3688; KFRI-AB 1022 to KFRI-AB 1030; KFRI-AB 1617 to KFRI-AB 1625; KFRI-AB 1931 to KFRI-AB 1935; KFRI-AB 1937	
<b>Quadrant number(s)</b>	25, 77, 79	
<b>Description</b>	<b>Habit</b>	Trees, 10-15 m high with spreading branches and greyish green, thick, soft bark; branchlets slender, weak, glabrous.
	<b>Leaves</b>	Imparipinnate, 12-20 cm long; leaflets 5-9,5-12 x 3.5-6.5 cm, ovate or elliptic, glabrous, entire, acute or rounded at base, acute or shortly acuminate at apex.
	<b>Flowers</b>	Purplish white, in short axillary racemes, shorter than the leaves; axis pubescent.
	<b>Fruits and seeds</b>	Pods 2.5-4.5 cm long, thick, oblong or slightly obovoid; seeds compressed, elliptical or reniform, wrinkled.
<b>Flowers and fruits</b>	April - July; February - May	
<b>Notes</b>	Seeds germinate by about 35 -70 per cent. Field-planted seedlings attain an average height of 245 cm with in a period of 3.5 years.	

<b>124. <i>Prosopis juliflora</i> (Sw.) DC.</b>		
<b>Family</b>	<b>Mimosaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Mimosa juliflora</i> Sw.	
<b>Local name(s)</b>	Vanni	
<b>Distribution</b>	Introduced from North and South America	
<b>Source locality(s)</b>	Nenmara (Palakkad)	
<b>Date(s) of planting</b>	26.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2937, KFRI-AB 2938, KFRI-AB 2939, KFRI-AB 2941 to KFRI-AB 2944; KFRI-AB-2946; KFRI-AB 2947, KFRI-AB 2949 to KFRI-AB 2951 to KFRI-AB 2953, KFRI-AB 2955 to KFRI-AB 2962	
<b>Quadrant number(s)</b>	73	
<b>Description</b>	<b>Habit</b>	Trees, 9-12 m high, sometimes armed with, yellowish brown deeply fissured bark and zig-zag, glabrous branchlets.
	<b>Leaves</b>	Bipinnate, with 2-4 pinnae; leaflets 22-36,6-23 x 1.5-5 mm, opposite, entire, glabrous, obtuse at base and apex.
	<b>Flowers</b>	Greenish yellow, solitary or in fascicles of 2-4, in axillary 4 -10 cm long, pedunculate spikes.
	<b>Fruits and seeds</b>	Pods pale yellow or straw-coloured when ripe, 12-25 cm long, linear; seeds 12-34 per pod, oblong, flattened.
<b>Flowers and fruits</b>	September - October; February - March	
<b>Notes</b>	Seeds germinate by about 86 - 90 per cent. Field-planted seedlings attain an average height of 98 cm with in a period of 2.5 years.	

<b>125. <i>Psidium guajava</i> L.</b>		
<b>Family</b>	Myrtaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Koyya, Perakka	
<b>Distribution</b>	Native of Tropical America	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	24.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2730 to KFRI-AB 2739	
<b>Quadrant number(s)</b>	62	
<b>Description</b>	<b>Habit</b>	Trees 4-8 m high with smooth, brown, peeling off bark and tomentose young parts.
	<b>Leaves</b>	Simple, 4-8.5x3-6 cm ovate-lanceolate, entire, glabrous above, pubescent beneath, obtuse at base, acuminate at apex.
	<b>Flowers</b>	White in one or few flowered axillary and terminal cymes with obovate, undivided calyx limbs, separating into 4-5 lobes.
	<b>Fruits and seeds</b>	Berries yellowish-cream coloured, 2.5-4 cm diameter, globose, ovoid or pyriform, crowned by the calyx limbs; seeds many, subreniform with hard testa.
<b>Flowers and fruits</b>	September - February	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 212 cm with in a period of 2.5 years.	

<b>126. <i>Pterocarpus marsupium</i> Roxb.</b>		
<b>Family</b>	Papilionaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Venga	
<b>Distribution</b>	India, Sri Lanka	
<b>Source locality(s)</b>	Natural stand	
<b>Date(s) of planting</b>	Not planted	
<b>Accession number(s)</b>	KFRI-AB 555 to KFRI-AB 557; KFRI-AB 561 to KFRI-AB 578	
<b>Quadrant number(s)</b>	2, 4, 8, 16, 17, 20, 21, 24, 29, 34, 65	
<b>Description</b>	<b>Habit</b>	Trees, 15-25 m high with stout crooked trunk, widely spreading branches and thick corky yellowish grey bark; exudation blood red.
	<b>Leaves</b>	Imparipinnate, up to 20 cm long; leaflets 5-7, coriaceous, 5-9 x 3-4.5 cm, oblong, entire, glabrous, shiny above, sub acute at base, obtuse, rounded, truncate or retuse at apex.
	<b>Flowers</b>	Pale yellow, fragrant in short lateral and terminal pubescent, paniculate racemes, usually shorter than the leaves.
	<b>Fruits and seeds</b>	Pods 2-4.5 cm in diameter, almost circular, glabrous with veined wings; seeds 1 or 2 oblong or subreniform.
<b>Flowers and fruits</b>	September - December	
<b>Notes</b>	Seeds germinate by about 27 per cent. Field-planted seedlings attain an average height of 50-100 cm with in a period of one year.	

<b>127. <i>Pterocarpus santalinus</i> L. f.</b>		
<b>Family</b>	<b>Papilionaceae</b>	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Rakthachandanam	
<b>Distribution</b>	India, Sri Lanka, Pakistan	
<b>Source locality(s)</b>	Palappilly (Thrissur)	
<b>Date(s) of planting</b>	14.11.2003	
<b>Accession number(s)</b>	KFRI-AB 1110 to KFRI-AB 1114; KFRI-AB 1117 to KFRI-AB 1118; KFRI-AB 1120; KFRI-AB 1123; KFRI-AB 1178; KFRI-AB 1180; KFRI-AB 1181	
<b>Quadrant number(s)</b>	8, 12, 16, 17, 20, 21	
<b>Description</b>	<b>Habit</b>	Trees, 9-18 m high with flaking bark and dense crown.
	<b>Leaves</b>	Imparipinnate, 10-18 cm long; leaflets 3, rarely 4 or 5; 3.8-7.6 cm long; broadly ovate or orbicular, coriaceous, slightly emarginated, adpressed, grey, hairy below, rounded at base and apex.
	<b>Flowers</b>	Yellow in short, simple or sparingly branched axillary racemes.
	<b>Fruits and seeds</b>	Pods 3-3.5 cm in diameter, oblique-orbicular, narrowed into a short stipe; seeds one or two pre pod, reddish brown, dolabriform.
<b>Flowers and fruits</b>	April- May; February - March	
<b>Notes</b>	Seeds germinate by about 10-12 per cent. Field-planted seedlings attain an average height of 55 cm with in a period of 4. 5 years.	

<b>128. <i>Pterygota alata</i> (Roxb.) R. Br.</b>		
<b>Family</b>	<b>Sterculiaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Sterculia alata</i> Roxb.; <i>S. heynei</i> Bedd.	
<b>Local name(s)</b>	Anathondi	
<b>Distribution</b>	India, Myanmar	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	20.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3220 to KFRI-AB 3227; KFRI-AB 3229; KFRI-AB 3231 to KFRI-AB 3239	
<b>Quadrant number(s)</b>	10, 11, 14, 32	
<b>Description</b>	<b>Habit</b>	Buttressed trees, 20-25m high with straight trunk, smooth ash-coloured bark and young parts golden-yellow pubescent.
	<b>Leaves</b>	Simple, crowded at the ends of branchlets, 10-22 x 7 -18 cm, ovate, orbicular, glabrous on both surfaces, truncate or subcordate at base, acute or shortly acuminate at apex.
	<b>Flowers</b>	Dull green or brownish, yellow, 1.5-2.5 cm across, fragrant, in axillary sub panicles of few-flowered racemes from leafless nodes.
	<b>Fruits and seeds</b>	Follicles up to 12 cm in diameter, globose, woody, nearly pubescent, corky within; seeds about 40, oblong, compressed, winged.
<b>Flowers and fruits</b>	February - March; November - December	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 351cm with in a period of 2.5 years.	

<b>129. <i>Radermachera xylocarpa</i> (Roxb.) K. Schum.</b>		
<b>Family</b>	<b>Bignoniaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Bignonia xylocarpa</i> Roxb.; <i>Stereospermum xylocarpum</i> Benth.	
<b>Local name(s)</b>	Vedinkorana, Pannimuringa	
<b>Distribution</b>	Peninsular India ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	13.11.2003, 02.06.2004	
<b>Accession number(s)</b>	KFRI-AB 1079, KFRI-AB 1700 to KFRI-AB 1719	
<b>Quadrat number(s)</b>	78, 80	
<b>Description</b>	<b>Habit</b>	Trees, up to 18 m high and about 2.4 m in girth with light greyish brown bark, flaking off as thin, irregular flakes.
	<b>Leaves</b>	Bipinnate, up to 1 m in long with 2-4 pairs and an odd leaflet; leaflets 6-7.5 x 2-4 cm, elliptic oblong, entire, glabrous, acute or rounded at base, acute or acuminate at apex.
	<b>Flowers</b>	White tinged with yellow, fragrant, in dense, compound, erect, rigid, pubescent corymbs or panicles, often appearing after leaf fall.
	<b>Fruits and seeds</b>	Capsules 2-7 cm long, slightly curved, bivalved, rough with numerous irregular hard tubercles; seeds winged, about 1.5 cm long with wings membraneous at both ends.
<b>Flowers and fruits</b>	March -May; February - May, during the next year	
<b>Notes</b>	Seeds germinate by about 26 per cent. Field-planted seedlings attain an average height of 195 cm with in a period of 4.5 years.	

<b>130. <i>Samadera indica</i> Gaertn.</b>		
<b>Family</b>	<b>Simaroubaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Quassia indica</i> (Gaertn.) Nootb.; <i>S. lucida</i> (Wall.) Planch.	
<b>Local name(s)</b>	Karinjotta	
<b>Distribution</b>	India, Sri Lanka, Myanmar	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	26.05.2004; 31.01.2006	
<b>Accession number(s)</b>	KFRI-AB 1453 to KFRI-AB 1462; KFRI-AB 3714 to KFRI-AB 3721	
<b>Quadrat number(s)</b>	65	
<b>Description</b>	<b>Habit</b>	Stunted trees with horizontal branches, up to 6-10 m high; bole fluted with transversely cracked dark grey bark.
	<b>Leaves</b>	Simple, 15-25 x 5-7 cm, elliptic or oblong, entire, glabrous and shining above, rounded or subacute at base, shortly acuminate at apex.
	<b>Flowers</b>	Yellowish green or yellowish red in axillary umbels on long, drooping peduncles, pedicilate; calyx glabrous, persistent.
	<b>Fruits and seeds</b>	Drupes red, 4-8 cm long, semicircular, compressed, smooth, reticulate, single-seeded; seeds narrowly winged, 2.5-3.5 x 1.5 cm, ovate, smooth.
<b>Flowers and fruits</b>	February - March; May - June	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 189 cm with in a period of 3 years.	



<b>131. <i>Santalum album</i> L.</b>		
<b>Family</b>	<b>Santalaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Sirium myrtifolium</i> Roxb.; <i>Santalum myrtifolium</i> Roxb.	
<b>Local name(s)</b>	Chandanam, Sandal	
<b>Distribution</b>	South-West India, Sri Lanka	
<b>Source locality(s)</b>	Natural stand and planted; Marayur (Idukki)	
<b>Date(s) of planting</b>	27.05.2004; 25.06.2005	
<b>Accession number(s)</b>	KFRI-AB 846 to 848; KFRI-AB 1439 to KFRI-AB 1453; KFRI-AB 3538 to KFRI-AB 3543; KFRI-AB 3545 to KFRI-AB 3546, KFRI-AB 1608, KFRI-AB 1612, KFRI-AB 1575, KFRI-AB 2453	
<b>Quadrant number(s)</b>	30, 71, 73, 74	
<b>Description</b>	<b>Habit</b>	Trees 4-6 m high with slender drooping branches and yellowish brown, strongly scented heart wood; bark surface, dark grey, rough with short vertical cracks.
	<b>Leaves</b>	Simple, 3-6.5 x 1-2.5 cm, elliptic lanceolate, glabrous, entire, thin, acute at base, subacute at apex.
	<b>Flowers</b>	Brownish purple in axillary or terminal trichotomous, paniculate cymes, about 4 cm long; shorter than leaves.
	<b>Fruits and seeds</b>	Drapes purplish black, up to 1 cm in diameter; seed 1 with hard, ribbed endocarp, subglobose, beaked.
<b>Flowers and fruits</b>	March - August	
<b>Notes</b>	Seeds germinate by about 60 per cent. Field-planted seedlings attain an average height of 219 cm with in a period of 3.5 years.	

<b>132. <i>Sapindus trifoliatus</i> L.</b>		
<b>Family</b>	<b>Sapindaceae</b>	
<b>Basionym/synonym</b>	<i>Sapindus emarginatus</i> Vahl; <i>S. laurifolius</i> Vahl	
<b>Local name(s)</b>	Pasakkotta, Uruvanchi, Soppumaram	
<b>Distribution</b>	South Asia.	
<b>Source locality(s)</b>	Vazhachal (Thrissur), Chinnar (Idukki)	
<b>Date(s) of planting</b>	27.05.2004	
<b>Accession number (s)</b>	KFRI-AB1510 to KFRI-AB 1533; KFRI-AB 3713	
<b>Quadrant number(s)</b>	76	
<b>Description</b>	<b>Habit</b>	Trees, up to about 18 m high with tomentose young parts and thick, brittle, greyish bark.
	<b>Leaves</b>	Abruptly pinnate, 12-30 cm long; leaflets 2-3 pairs, 4-20 x 2.5-10 cm, subopposite, terminal pair largest, lanceolate or elliptic-lanceolate, oblique or round at base, acuminate at apex.
	<b>Flowers</b>	White, minute, in 0.4-0.5 cm long, densely pubescent axillary or terminal panicles; male flowers numerous, bisexual flowers few.
	<b>Fruits and seeds</b>	Drapes of three dehiscent cocci, sweet-scented when ripe, 2- 3 lobbed; seeds, black, smooth, 1- 2 cm in diameter.
<b>Flowers and fruits</b>	October - December; February - May	
<b>Notes</b>	Seeds germinate by about 67 per cent. Field-planted seedlings attain an average height of 258 cm with in a period of 3.5 years.	

133. <i>Saraca asoca</i> (Roxb.) de Wilde.		
Family	Caesalpiniaceae	
Basionym/synonym(s)	<i>Jonesia asoca</i> Roxb.; <i>Saraca indica sensu</i> Bedd. (non. L.)	
Local name(s)	Asokam	
Distribution	India, Sri Lanka, Myanmar, Malaysia.	
Source locality(s)	Malayattoor (Ernakulam); Sholayar (Thrissur)	
Date(s) of planting	1.06.2004	
Accession number(s)	KFRI-AB 1643 to KFRI-AB 1667	
Quadrant number(s)	79	
Description	<b>Habit</b>	Evergreen trees, 6-12 m high, much branched to form a dense crown; branchlets short, stout with crowded leaves.
	<b>Leaves</b>	Paripinnate, 10-25 cm long, red when young; leaflets 3-6 pairs, 7.5-25 x 2.5-6.4 cm, oblong-lanceolate to oblong, drooping when young, oblique at base, blunt acuminate at apex.
	<b>Flowers</b>	Orange coloured on opening, later turning scarlet, fragrant, 2.5-3.8 cm long, in axillary, compact, glabrous panicles or corymbs. Axillary to leaves or leaf scars.
	<b>Fruits and seeds</b>	Pod 5-10 x 2-5 cm, flat, oblong, coriaceous or almost woody, tapering at both ends; continuous within; seeds 2-8, 3.8 cm long, ovoid, slightly compressed.
Flowers and fruits	March - July	
Notes	Seeds germinate by about 100 per cent. Field-planted seedlings attain an average height of 234 cm with in a period of 3.5 years.	

134. <i>Schleichera oleosa</i> (Lour.) Oken		
Family	Sapindaceae	
Basionym/synonym(s)	<i>Pistacia oleosa</i> Lour.; <i>Schleichera trijuga</i> Willd.	
Local name(s)	Poovam, Poovanam, Dhoothalam	
Distribution	Indo-Malesia	
Source locality(s)	Peechi (Thrissur)	
Date(s) of planting	21.06.2005	
Accession number(s)	KFRI-AB 1985 to KFRI-AB 1995; KFRI-AB 1997; KFRI-AB 2000	
Quadrant number(s)	18, 21, 22, 23, 31	
Description	<b>Habit</b>	Trees up to 25 m high with, smooth, brittle, grey bark, reddish inside and fluted bole.
	<b>Leaves</b>	Paripinnate, 20-40 cm long; leaflets 2-4 pairs, opposite, 5-15 x 1.8-4.5 cm, entire, glabrous, oblique at base, acute or obtuse at apex.
	<b>Flowers</b>	Yellowish green, polygamo-dioecious, sessile in dense clusters of axillary racemes towards the apex of the branchlets.
	<b>Fruits and seeds</b>	Berries 1.5-3.8 cm long, globose or ovoid with a pointed tip, smooth or slightly prickly, dry, indehiscent; seeds 1-2, enclosed in pulpy aril.
Flowers and fruits	March - April; June - July	
Notes	Seeds germinate by about 80-90 per cent. Field-planted seedlings attain an average height of 92 cm with in a period of 3.5 years.	

<b>135. <i>Semecarpus auriculatu</i> Bedd.</b>		
Family	Anacardiaceae	
Basionym/synonym(s)	Nil	
Local name(s)	Vellacheru	
Distribution	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
Source locality(s)	Kulathupuzha (Kollam)	
Date(s) of planting	28.03.2006	
Accession number(s)	KFRI-AB 3555, KFRI-AB 3556, KFRI-AB 3557, KFRI-AB 3558	
Quadrat number(s)	49	
Description	<b>Habit</b>	Trees with dense crown, 6-10 m high; bark black, smooth with exudation black on drying.
	<b>Leaves</b>	Simple, clustered at the tips of branchlets, 20-60 x 10-15 cm, obovate, entire, glabrous, acute at base, obtuse at apex.
	<b>Flowers</b>	Polygamous or dioecious, male flowers yellow and female flowers green, inconspicuous in terminal or axillary glabrous panicles.
	<b>Fruits and seeds</b>	Drupes black, fleshy, obliquely oblong, striate, up to 1 cm long, seated on cup-like hypocarp formed of the accrescent calyx base; seed one, pendulous.
Flowers and fruits	November - March	
Notes	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 89 cm with in a period of 2 years.	

<b>136. <i>Semecarpus travancorica</i> Bedd.</b>		
Family	Anacardiaceae	
Basionym/synonym(s)	Nil	
Local name(s)	Avukkaram	
Distribution	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
Source locality(s)	Kulathupuzha (Kollam)	
Date(s) of planting	28.06.2007	
Accession number(s)	KFRI-AB-2964, KFRI-AB 2975, KFRI-AB 2697, KFRI-AB 3354 KFRI-AB,3148	
Quadrat number(s)	43,49	
Description	<b>Habit</b>	Trees with dense crown, 6-10 m high; bark black, smooth with exudation black on drying.
	<b>Leaves</b>	Simple, clustered at the tips of branchlets, 20-60 x 10-15 cm, obovate, entire, glabrous, acute at base, obtuse at apex.
	<b>Flowers</b>	Greenish-yellow, polygamous or dioecious, in terminal or axillary glabrous panicles.
	<b>Fruits and seeds</b>	Drupes black, fleshy, obliquely oblong, striate, up to 1 cm long, seated on cup-like hypocarp formed of the accrescent calyx base; seed one, pendulous.
Flowers and fruits	November - March	
Notes	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 54 cm with in a period of 1 year.	

<b>137. <i>Senna siamea</i> (Lamk.) Irwin et Barneby</b>		
<b>Family</b>	Caesalpiniaceae	
<b>Basionym/synonym(s)</b>	<i>Cassia siamea</i> Lamk.; <i>Cassia florida</i> Vahl	
<b>Local name(s)</b>	Manjakkonna	
<b>Distribution</b>	Native of South-East Asia, widely grown in the tropics	
<b>Source locality(s)</b>	Natural stand	
<b>Date(s) of planting</b>	Not Planted	
<b>Accession number(s)</b>	KFRI-AB 807	
<b>Quadrant number(s)</b>	55	
<b>Description</b>	<b>Habit</b>	Trees 8-12 m high with grey bark and dark brown or nearly black wood and puberulent young parts.
	<b>Leaves</b>	Abruptly pinnate with glandular rachis; leaflets 8-14 pairs, 3-6.5 cm long, oblong or elliptic-oblong, entire, emarginate, obtuse at base shortly mucronate at apex.
	<b>Flowers</b>	Yellow in bracteate corymbs forming large terminal panicles. Pubescent calyx
	<b>Fruits and seeds</b>	Pods variable in size, 6.5-12 x 0.7-1 cm, flat, septate between seeds with thickened sutures; seeds 20-30, longitudinal.
<b>Flowers and fruits</b>	January - May	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 104 cm with in a period of 1 year.	

<b>138. <i>Spathodea campanulata</i> Beauv.</b>		
<b>Family</b>	Bignoniaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Pattadi	
<b>Distribution</b>	Native of tropical Africa, planted as an avenue tree in Kerala	
<b>Source locality(s)</b>	Nelliyampathy, Nemmara (Palakkad)	
<b>Date(s) of planting</b>	25.08.2004	
<b>Accession number(s)</b>	KFRI-AB 1905 to KFRI-AB 1909	
<b>Quadrant number(s)</b>	16,20	
<b>Description</b>	<b>Habit</b>	Trees up to 18 cm high with smooth, light brownish grey bark and tomentose branchlets.
	<b>Leaves</b>	Imparipinnate, 15-19 foliate; leaflets 9-19, 5-12.5 x 3-7 cm, elliptic oblong, obovate-oblong, pubescent beneath, round or oblique at base, acuminate at apex.
	<b>Flowers</b>	Orange-scarlet, bell-shaped, up to 7.5x5 cm. in size, spathaceous, densely pubescent with red calyx in dense terminal racemes.
	<b>Fruits and seeds</b>	Capsules brownish-black, woody, bivalved, oblong-lanceolate, flattened; seeds numerous, winged.
<b>Flowers and fruits</b>	September - October	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average growth of 319 cm with in a period of 4 years.	

<b>139. <i>Sterculia guttata</i> Roxb. ex DC.</b>		
<b>Family</b>	<b>Sterculiaceae</b>	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Peenari, Kavalam, Pottakavalam, Thondi, Kithondi	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	23.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2490. KFRI-AB 2492 to KFRI-AB 2499; KFRI-AB 2501 to KFRI-AB 2505; KFRI-AB 2507 to KFRI-AB 2514	
<b>Quadrat number(s)</b>	22,23,27	
<b>Description</b>	<b>Habit</b>	Trees, upto 18 m high with straight trunk, thick, cracked bark and young shoots clothed with stellate hairs.
	<b>Leaves</b>	Simple, 10-17.5x5.5-10.5 cm, ovate or oblong, entire, glabrous above, rounded or subcordate at base, acute or acuminate at apex.
	<b>Flowers</b>	White dotted with purple, often in fascicles of 3, on short pubescent racemes; calyx, reddish inside, stellate hairy.
	<b>Fruits and seeds</b>	Orange coloured, aggregate of 1-5 follicles, up to 7 cm long, obovoid, smooth, pinkish within; seeds black, shining, oblong.
<b>Flowers and fruits</b>	April - May; August - September	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 185 cm with in a period of 2.5 years.	

<b>140. <i>Sterculia urens</i> Roxb.</b>		
<b>Family</b>	<b>Sterculiaceae</b>	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Theethondi, Paravakka	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	26.08.2004; 25.06.2005	
<b>Accession number(s)</b>	KFRI-AB 1965 to KFRI-AB 1967; KFRI-AB 1969 to KFRI-AB 1973; KFRI-AB 1975 to KFRI-AB 1977; KFRI-AB 1979 to KFRI-AB 1981; KFRI-AB 2801 to KFRI-AB 2807; KFRI-AB 3530 to KFRI-AB 3537.	
<b>Quadrat number(s)</b>	8,53,55, 64	
<b>Description</b>	<b>Habit</b>	Trees, 20-25 m high with straight trunk, white, smooth peeling off, papery bark and pubescent young parts.
	<b>Leaves</b>	Simple, palmately lobbed, up to 20 cm across, crowded at the apex of branchlets, glabrous above, velvety beneath with lobes cordate at base, acuminate at apex.
	<b>Flowers</b>	Yellowish green in much branched pubescent terminal panicles with hermaphrodite and female ones mixed with the males.
	<b>Fruits and seeds</b>	Red, aggregate of 4-6 follicles, up to 2.5 cm long, densely pubescent, mixed with stinging hairs; seeds 3-6, oblong, black or brown.
<b>Flowers and fruits</b>	December - February	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 119 cm with in a period of 3.5 years.	

**141. *Stereospermum colais* (Buch.-Ham.) Mabber.**

<b>Family</b>	<b>Bignoniaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Bignonia colais</i> Buch.-Ham. ex Dillw. <i>Stereospermum tetragonum</i> DC.; <i>S. chelonoides sensu</i> Wt.; <i>S. personatum</i> (Hassk.) Chatter.	
<b>Local name(s)</b>	Pathiri, Poopathiri, Karingazha	
<b>Distribution</b>	Indo-China, Malesia	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	24.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2740 to KFRI-AB 2754	
<b>Quadrat number(s)</b>	43, 79	
<b>Description</b>	<b>Habit</b>	Trees, up to 30 m high with spreading branches and 1.2 cm thick, pale greyish-brown bark, exfoliating irregularly.
	<b>Leaves</b>	Imparipinnate, 35-45 cm long with 3-5 pairs of pinnae and an odd leaflet; leaflets 4.5-12.5 x 2-5 cm elliptic, elliptic-lanceolate, elliptic-oblong, unequal sided, entire, glabrous, acute or rounded at base, coudate-acuminate at apex.
	<b>Flowers</b>	Reddish purple with yellow veins, fragrant, in lax drooping panicles with articulated glabrous branches. Corolla bell shaped.
	<b>Fruits and seeds</b>	Capsules 30-55 cm long, subquadrangular, curved, pointed, spirally twisted and dotted; seeds membranous, winged.
<b>Flowers and fruits</b>	April - June	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 190 cm with in a period of 2.5 years.	

**142. *Strychnos nux-vomica* L.**

<b>Family</b>	<b>Loganiaceae</b>	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Kanjiram, Kangnalam	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Natural stand and planted; Palappilly (Thrissur)	
<b>Date(s) of planting</b>	24.06.2005	
<b>Accession number(s)</b>	KFRI-AB 699 to KFRI-AB 710; KFRI-AB 2680 to 2696	
<b>Quadrat number(s)</b>	36,37,42,43	
<b>Description</b>	<b>Habit</b>	Trees, 15-20 m high, with short and sharp axillary spines and grey bark, often with lenticels.
	<b>Leaves</b>	Simple, 4.5-9.5 x 3-6.5 cm, broadly elliptic, glabrous and shining above, 5-nerved and rounded at the base, obtuse, acute or shortly acuminate at apex.
	<b>Flowers</b>	Greenish white in terminal sessile cymes, often with pubescent short pedicels.
	<b>Fruits and seeds</b>	Berries orange-red when ripe, shiny with brittle pericarp, 3-6 cm in diameter; seeds many, discoid, compressed, concave on one side, convex on the other and upper side grey silky hairy.
<b>Flowers and fruits</b>	March - November	
<b>Notes</b>	Seeds germinate by 13-52 per cent. Field-planted seedlings attain an average height of 54 cm with in a period of 2.5 years.	

<b>143. <i>Strychnos potatorum</i> L.</b>		
<b>Family</b>	Loganiaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Kadakam, chillam, Thettamaram	
<b>Distribution</b>	Peninsular India and Sri Lanka	
<b>Source locality(s)</b>	Chinnar (Idukki)	
<b>Date(s) of planting</b>	21.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2698 to KFRI-AB 2704	
<b>Quadrat number(s)</b>	36, 37	
<b>Description</b>	<b>Habit</b>	Trees, 12-15 m high, with short and sharp axillary spines and brownish black, rough, corky bark, often with deep and narrow vertical cracks.
	<b>Leaves</b>	Simple, 5-15 x 3-7 cm, broadly elliptic, entire, glabrous and shining above, 3-5-nerved and obtuse or rounded at the base, acute at apex.
	<b>Flowers</b>	White, subsessile in short axillary cymes produced on mature wood often with pubescent short pedicels.
	<b>Fruits and seeds</b>	Berries black when ripe, 3-6 cm in diameter; seeds 1-2, circular, blunty, lenticular, yellow, shining with short appressed silky hairs.
<b>Flowers and fruits</b>	March - December	
<b>Notes</b>	Seeds germinate by 13-52 per cent. Field-planted seedlings attain an average height of 32 cm with in a period of 2.5 years.	

<b>144. <i>Swietenia macrophylla</i> King</b>		
<b>Family</b>	Meliaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Mahogany	
<b>Distribution</b>	Native of Central America, introduced in the tropics	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	13.11.2003; 17.11.2003; 28.05.2004	
<b>Accession number(s)</b>	KFRI-AB 1052 to KFRI-AB 1056; KFRI-AB 1237 to KFRI-AB 1246; KFRI-AB 1633 to KFRI-AB 1642	
<b>Quadrat number(s)</b>	8,29,34,71,72	
<b>Description</b>	<b>Habit</b>	Trees up to 30-40 m high and 1-2.5 m in girth; trunk straight, cylindrical, buttressed towards base and crown dense with spreading branches.
	<b>Leaves</b>	Paripinnate, up to 0.6 m long; leaflets 4-10, 5.5-12 x 2.5-4 cm, ovate-lanceolate, grooved above, glabrous, oblique at base, acuminate at apex.
	<b>Flowers</b>	Greenish white in 8-13 cm long, terminal panicles, almost 0.8 cm across.
	<b>Fruits and seeds</b>	Capsules woody, up to 12.5 x 7.5 cm, erect, club-shaped, five valved; seeds 1-6, winged.
<b>Flowers and fruits</b>	April-May; February-March	
<b>Notes</b>	Seeds germinate by about 60- 90 per cent. Field-planted seedlings attain an average height of 491 cm with in a period of 4.5 years.	

145. <i>Swietenia mahagoni</i> (L.) Jacq.		
Family	Meliaceae	
Basionym/synonym(s)	<i>Cedrela mahagoni</i> L.; <i>Swietenia mahagoni</i> (L.) Lamk.	
Local name(s)	Mahogany	
Distribution	Native of West Indies and Central America; introduced in tropics	
Source locality(s)	Peechi (Thrissur)	
Date(s) of planting	17.11.2003; 28.05.2004	
Accession number(s)	KFRI-AB 1247 to KFRI-AB 1251; KFRI-AB 1626 to KFRI-AB 1632	
Quadrant number(s)	34,72	
Description	Habit	Trees, about 30-35m high; bark, wringled, corky, rough.
	Leaves	Paripinnate with 2-4 pairs of glabrous leaflets; leaflets 5-6 x 2-3 cm, ovate-lanceolate, oblique at base, acuminate at apex.
	Flowers	Greenish yellow, 0.6-0.8 cm across in axillary, glabrous panicles, shorter than leaves.
	Fruits and seeds	Capsules erect, 5-loculed, dehiscent, 5-10 cm long, oblong; seeds brown, 4-5 cm long, compressed, winged, 35-45 per fruit.
Flowers and fruits	April - July; January - March	
Notes	Seeds germinate by about 74 per cent. Field-planted seedlings attain an average height of 210 cm with in a period of 4.5 years.	

146. <i>Syzygium cuminii</i> (L.) Skeels		
Family	Myrtaceae	
Basionym/synonym(s)	<i>Myrtus cumini</i> L.; <i>Eugenia jambolana</i> Lamk.; <i>S. jambolanum</i> DC.	
Local name(s)	Njaaval, Njara	
Distribution	South Asia	
Source locality(s)	Peechi (Thrissur)	
Date(s) of planting	26.05.2004; 03.06.2004	
Accession number(s)	KFRI- AB 1467 to KFRI -AB 1490; KFRI-AB 3684	
Quadrant number(s)	65, 72	
Description	Habit	Trees up to 30 m high with much branched dense, crown; bole often crooked and bark thick and light grey mottled with dark grey, with shallow depressions.
	Leaves	Simple, 7.6-15x3.8 -6.3 cm, variable in shape, usually lanceolate, smooth and shining above with intra-marginal nerve, obtuse at base, acuminate at apex.
	Flowers	Bisexual, dull white, fragrant, sessile, about 0.8 cm across in trichotomous panicles, arising usually below the leaves.
	Fruits and seeds	Berries pink turning black with juicy pulp, up to 2 cm long, obovoid, oblong or subglobose, 1.3-2.5 cm long, crowned with the truncate calyx limbs; seeds single, globose, exalbuminous.
Flowers and fruits	March - May; June - August	
Notes	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 140 cm with in a period of 2 years.	



<b>147. <i>Syzygium palghatense</i> Gamble</b>		
Family	Myrtaceae	
Basionym/synonym(s)	Nil	
Local name(s)	Kattunjavel	
Distribution	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
Source locality(s)	Parambikulam (Palakkad)	
Date(s) of planting	23.12.2005	
Accession number(s)	KFRI-AB 3698 to KFRI-AB 3712	
Quadrat number(s)	16	
Description	<b>Habit</b>	Trees up to 15 m high with smooth bark, greyish outside; branchlets subtetragonous become terete on maturity.
	<b>Leaves</b>	Simple, 3.5-8.3 x 2-3.5 cm, oblong, glabrous, with intra marginal venation, sparsely gland-dotted on lower surface, acute at base, obtusely acuminate or acute at apex.
	<b>Flowers</b>	Creamy white in terminal or axillary cymes of 2-3 cm long. Calyx tube funnel shaped; petals calyprate, cauducous at early stage.
	<b>Fruits and seeds</b>	Berries 1-1.3 x 0.4 - 0.5 cm, obconic with a hollow depression at apex, crowded by the persistent calyx limbs; seeds 1, globose, exalbuminous.
Flowers and fruits	January - June	
Notes	Seeds germinate by about 35 per cent. Field-planted seedlings attain an average height of 75 cm with in a period of 2 years.	

<b>148. <i>Syzygium travancoricum</i> Gamble</b>		
Family	Myrtaceae	
Basionym/synonym(s)	Nil	
Local name(s)	Poriyal, Vathamkollimaram	
Distribution	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
Source locality(s)	Kulathupuzha (Kollam)	
Date(s) of planting	28.03.2006	
Accession number(s)	KFRI-AB 354, KFRI-AB 3548, KFRI-AB 3549, KFRI-AB 3550, KFRI-AB 3551, KFRI-AB 3552, KFRI-AB 3553	
Quadrat number(s)	47	
Description	<b>Habit</b>	Trees, up to 25 m high with bark greyish brown, longitudinally fissured, peeling off as thin irregular flakes; branchlets tetragonal.
	<b>Leaves</b>	Simple, up to 15 x 8.5 cm, ovate, entire, glabrous, chartaceous with 12-15 pairs of lateral nerves, shortly decurrent on the petiole at base, acuminate at apex.
	<b>Flowers</b>	White in axillary, peduncled, corymbose cymes, about 0.3 cm across.
	<b>Fruits and seeds</b>	Berries deep violet, oblong-obtuse on both sides, pericarp juicy; seed one; seeds globose, exalbuminous.
Flowers and fruits	April	
Notes	Field-planted seedlings attain an average height of 209 cm with in a period of 2 years.	

<b>149. <i>Syzygium zeylanicum</i> (L.) DC.</b>		
<b>Family</b>	<b>Myrtaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Eugenia zeylanica</i> (L.) Wt.; <i>Myrtus zeylanica</i> L.	
<b>Local name(s)</b>	Poochappazham	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Vythiri (Kozhikode)	
<b>Date(s) of planting</b>	24.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2630 to KFRI-AB 2632; KFRI-AB 2634; KFRI-AB 2635; KFRI-AB 2637; KFRI-AB-2642 to KFRI-AB 2651; KFRI-AB 2653	
<b>Quadrant number(s)</b>	73	
<b>Description</b>	<b>Habit</b>	Shrubs or small trees, up to 4 m high with pale brown bark and slender, terrete, purplish brown branchlets.
	<b>Leaves</b>	Simple, aromatic, 2-5.5 x 0.5-3.5 cm, ovate, elliptic to linear lanceolate, margins slightly recurved, acute at base, caudate-acuminate at apex.
	<b>Flowers</b>	White in axillary and terminal many-flowered paniculate cymes forming groups of 3-5 at the ends of inflorescence branches. Petals free, deciduous.
	<b>Fruits and seeds</b>	Berries white, almost 0.5 cm in diameter, pisciform, 1-seeded, crowned by calyx lobes; seeds globose.
<b>Flowers and fruits</b>	January - April	
<b>Notes</b>	Field-planted seedlings attain an average growth of 111 cm with in a period of 2.5 years.	

<b>150. <i>Tectona grandis</i> L.f.</b>		
<b>Family</b>	<b>Verbenaceae</b>	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Thekku	
<b>Distribution</b>	South and South-East Asia	
<b>Source locality(s)</b>	Natural stand	
<b>Date(s) of planting</b>	Not planted	
<b>Accession number(s)</b>	KFRI-AB001 to KFRI-AB 415	
<b>Quadrant number(s)</b>	All plots except a few	
<b>Description</b>	<b>Habit</b>	Trees, 20-30 m high, bark 10-20 mm thick, rough, shallowly fissured with quadrangular, stellate-tomentose branchlets.
	<b>Leaves</b>	Simple, 20-60 x 15-30 cm, elliptic or obovate, rough above, stellate-tomentose beneath, entire, cuneate at base, acute or acuminate at apex.
	<b>Flowers</b>	White, in erect, terminal, branched cymose panicles, 30-80 cm long, shortly pediceled.
	<b>Fruits and seeds</b>	Drupes enclosed in enlarged calyx, almost 1 cm in diameter, obscurely 4-lobbed with bony endocarp; seeds 1-4, oblong.
<b>Flowers and fruits</b>	June - September	
<b>Note</b>	Seeds germinate by about 85 per cent. Field-planted seedlings attain an average height of 1 metre with in a period of 5 years.	

<b>151. <i>Terminalia arjuna</i> (Roxb. ex DC.) Wt. et Arn.</b>		
<b>Family</b>	<b>Combretaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Pentaptera arjuna</i> Roxb. ex DC.	
<b>Local name(s)</b>	Neermaruthu, Attumaruthu	
<b>Distribution</b>	India, Sri Lanka	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	18.11.2003; 26.05.2004	
<b>Accession number(s)</b>	KFRI-AB 1290 to KFRI-AB 1304; KFRI-AB 1429 to KFRI-AB 1438	
<b>Quadrat number(s)</b>	34, 35, 63	
<b>Description</b>	<b>Habit</b>	Trees, 15-30 m high with greenish-white, thick, flaking off and smooth bark; branchlets often horizontal and spreading.
	<b>Leaves</b>	Simple, 10-25 x 4.3-9 cm, oblong or elliptic, coriaceous, entire, glabrous above, more or less pubescent beneath, rounded or cordate at base, shortly acute or obtuse at the apex.
	<b>Flowers</b>	Bisexual, pale yellowish white, about 0.5 cm across, in axillary or terminal panicle spikes.
	<b>Fruits and seeds</b>	Drupe, yellow, five-angled, ovoid or ovoid-oblong, glabrous, 5-7 winged, marked with upward curved striations; seeds 2-5 cm long.
<b>Flowers and fruits</b>	April - July; February - May of the following year	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 209 cm with in a period of 3.5 years.	

<b>152. <i>Terminalia bellirica</i> (Gaertn.) Roxb.</b>		
<b>Family</b>	<b>Combretaceae</b>	
<b>Basionym/synonym(s)</b>	<i>T. taria</i> Ham.; <i>Myrobalanus bellirica</i> Gaertn.	
<b>Local name(s)</b>	Thanni, Tusham.	
<b>Distribution</b>	South Asia	
<b>Source locality(s)</b>	Natural stand and planted; Peechi (Thrissur)	
<b>Date(s) of planting</b>	13.11.2003; 27.05.2004	
<b>Accession number(s)</b>	KFRI-AB 791 to KFRI-AB 793; KFRI-AB 1065 to KFRI-AB 1078; KFRI-AB 1227 to KFRI-AB 1231; KFRI-AB 1555 to KFRI-AB 1559	
<b>Quadrat number(s)</b>	8, 21, 12, 29, 75	
<b>Description</b>	<b>Habit</b>	Trees, up to 40 m high; bole often buttressed with thick, blackish grey smooth bark; branchlets often warty with persistent leaf scars.
	<b>Leaves</b>	Simple, clustered at apex of branches, 7.5-20 cm x 5-15 cm, broadly elliptic, puberulous when young, obtuse at base, acute at apex.
	<b>Flowers</b>	Pale greenish yellow with a foul smell, in 7.5-15 cm long, solitary or in axillary or extra-axillary spikes. Calyx tube rusty pubescent, cream, triangular, 5 lobed.
	<b>Fruits and seeds</b>	Drupe ovoid, ellipsoidal or globose, 2.5-3.3 cm long, grey-velvety tomentose; seeds subglobose, obscurely 5-angular.
<b>Flowers and fruits</b>	April - June; November - February	
<b>Notes</b>	Seeds germinate by about 69 per cent. Field-planted seedlings attain an average height of 279 cm with in a period of 4.5 years.	

<b>153. <i>Terminalia catappa</i> L.</b>		
<b>Family</b>	Combretaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Badaam, Adamaram	
<b>Distribution</b>	Planted in tropics through India to Malesia, Australia and Polynesia	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	18.11.2003	
<b>Accession number(s)</b>	KFRI-AB 1182 to KFRI-AB 1186; KFRI-AB 1343; KFRI-AB 1344	
<b>Quadrant number(s)</b>	20,21,39	
<b>Description</b>	<b>Habit</b>	Trees, 15-20 m high and 0.5- 1 m in girth, often buttressed at the base with bark brownish grey and smooth bark and spreading branches.
	<b>Leaves</b>	Simple, 15-35 cm x 1.3-20 cm, obovate, entire, glabrous above, puberulent beneath, auricled at base, rounded or apiculate at apex.
	<b>Flowers</b>	White, wooly within, in axillary, simple, solitary, slender spikes, shorter than the leaves; upper flowers male and lower bisexual.
	<b>Fruits and seeds</b>	Drapes pinkish yellow or reddish purple when ripe, ellipsoid, with two sharp keels, glabrous, 2-winged, indehiscent; seeds 1, hard and stoney.
<b>Flowers and fruits</b>	March - April; June -July, sometimes extending to January	
<b>Notes</b>	Seeds germinate by about 80 per cent. Field-planted seedlings attain an average height of 220 cm with in a period of 4.5 years.	

<b>154. <i>Terminalia chebula</i> Retz.</b>		
<b>Family</b>	Combretaceae	
<b>Basionym/synonym(s)</b>	<i>Myrobalanus chebula</i> (Retz.) Gaertn.	
<b>Local name(s)</b>	Kadukka	
<b>Distribution</b>	South Asia	
<b>Source locality(s)</b>	Chinnar (Idukki)	
<b>Date(s) of planting</b>	28.06.2007	
<b>Accession number(s)</b>	KFRI-AB 2222; KFRI-AB 2591; KFRI-AB 2700; KFRI-AB 2294; KFRI-AB 1115; KFRI-AB 3321; KFRI-AB 3310; KFRI-AB 2491; KFRI-AB 2757; 3196; 1206; KFRI-AB 2526; KFRI-AB 1226.	
<b>Quadrant number(s)</b>	15,19,26,37,63	
<b>Description</b>	<b>Habit</b>	Trees, up to 25 m high, bark thick, dark brown to black, fissured shallow; young shoots densely pubescent, branchlets glabrous.
	<b>Leaves</b>	Simple with stout petiole, grooved above, 2 sessile glands at the top, 9.8-12 x 4-13 cm, ovate, elliptic, obovate-elliptic, entire, glabrous above and tawny villous beneath, round, obtuse, oblique or subtruncate at base, acute or acuminate at apex.
	<b>Flowers</b>	Greenish white in terminal or axillary spikes with an offensive smell. Calyx tube triangular, creamy with 5 lobes; petals absent.
	<b>Fruits and seeds</b>	Drapes obovoid, woody, obscurely 5-angled, glabrous, greenish yellow; seed one per locule, exalbuminous.
<b>Flowers and fruits</b>	February - August	
<b>Notes</b>	Seeds germinate by about 60 per cent. Field-planted seedlings attain an average height of 12 cm with in a period of 6 months.	

<b>155. <i>Terminalia crenulata</i> Heyne ex Roth</b>		
Family	Combretaceae	
Basionym/synonym(s)	<i>T. tomentosa</i> (DC.) Wt. et Arn. var. <i>crenulata</i> (Heyne et Roth.) Cl.	
Local name(s)	Karimaruthu, Kuramaruthu, Thembavu, Matthi	
Distribution	India, Sri Lanka	
Source locality(s)	Natural stand and planted; Peechi (Thrissur)	
Date(s) of planting	4.06.2004	
Accession number (s)	KFRI-AB 484 to KFRI-AB 485; KFRI-AB 488 to 519; KFRI-AB 521; KFRI-AB 1888 to KFRI-AB 1904; KFRI-AB 3697	
Quadrat number(s)	16,20,24,29,34,35,39,55,64,65,66,71,72,76,79,45	
Description	<b>Habit</b>	Trees up to 30 m high with straight trunk, rough, greyish-black bark and yellowish brown and pubescent young parts.
	<b>Leaves</b>	Simple, opposite or subopposite, 4-18 x 3.5-11.5 cm, ovate or elliptic oblong, entire, tomentose when young, coriaceous, often cordate at base, acute at apex.
	<b>Flowers</b>	Dull yellow, in fulvous-pubescent in terminal spikes or panicles. Calyx tube yellow, angled, five lobbed; petals absent.
	<b>Fruits and seeds</b>	Drapes brown, up to 5 cm long, with 5 broad, glabrous, winged, 1 seeded; seeds pale yellow, exalbuminous.
Flowers and fruits	April - June.	
Notes	Seeds germinate by about 72 per cent. Field-planted seedlings attain an average height of 427 cm with in a period of 3.5 years.	

<b>156. <i>Terminalia paniculata</i> Roth</b>		
Family	Combretaceae	
Basionym/synonym(s)	<i>Pentaptera paniculata</i> (Roth) Roxb.	
Local name(s)	Maruthu, Pullamaruthu	
Distribution	Peninsular India ( <b>Endemic</b> )	
Source locality(s)	Natural stand	
Date(s) of planting	Not planted	
Accession number(s)	KFRI-AB 627 to KFRI-AB 640; KFRI-AB 642 to KFRI-AB 647	
Quadrat number(s)	4,5,16,24,29,39,40,56,64,69,77,78a,79,80	
Description	<b>Habit</b>	Trees, 24 -30 m high, bark thick, rough, brown with shallow vertical fissures, often slightly buttressed at the base with rusty tomentose young parts.
	<b>Leaves</b>	Simple, lower subopposite, upper alternate, 10-23 cm x 4.4 - 9 cm, oblong, nearly glabrous or scattered hairy above, cordate or rounded at base, acute or acuminate at apex.
	<b>Flowers</b>	Greenish yellow, sessile in slender spikes forming terminal or axillary compound panicles. Calyx tube, cream with 5 lobes; petals absent.
	<b>Fruits and seeds</b>	Drapes reddish yellow, 0.6-1.3 cm long, sessile with 3 wings, two of them much smaller than the other, rusty tomentose; seed 1, exalbuminous.
Flowers and fruits	July - December; December - May	
Notes	Seeds germinate by about 12 per cent. Field-planted seedlings attain an average height of 54 cm with in a period of 1 year.	

<b>157. <i>Toddalia asiatica</i> (L.) Lamk.</b>		
<b>Family</b>	<b>Rutaceae</b>	
<b>Basionym/synonym(s)</b>	<i>T. aculeata</i> (Smith) Pers.; <i>Paullinia asiatica</i> L.; <i>Toddalia floribunda</i> Wall.; <i>Scopalia aculeata</i> Smith	
<b>Local name(s)</b>	Kakkathudali, Karamullu, Mulakutanni	
<b>Distribution</b>	Indo-Malesia, Africa	
<b>Source locality(s)</b>	Natural stand and planted; Chimmony (Thrissur)	
<b>Date(s) of planting</b>	22.12.2005	
<b>Accession number(s)</b>	KFRI-AB 849; KFRI-AB 3660 to KFRI-AB 3664	
<b>Quadrat number(s)</b>	51, 52	
<b>Description</b>	<b>Habit</b>	Shrubs, 2-3 m high, often armed with sharp, curved or straight prickles, sometimes unarmed.
	<b>Leaves</b>	Trifoliate; leaflets sessile, 2-5.5 x 1-3 cm, lanceolate oblong or obovate, crenate or subentire, glabrous, acute at base, blunt acuminate with notch at apex.
	<b>Flowers</b>	White in axillary cymes; male flowers with petals shorter than stamens; female flowers with petals longer than the male.
	<b>Fruits and seeds</b>	Orange-coloured, globose, grooved 3-7 loculed; seeds solitary in each locule, reniform.
<b>Flowers and fruits</b>	September - January	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 89 cm with in a period of 2.5 years	

<b>158. <i>Toona ciliata</i> M. Roem.</b>		
<b>Family</b>	<b>Meliaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Cedrela toona</i> Roxb.	
<b>Local name(s)</b>	Mathagirivembu, Vembu, Chandanavembu	
<b>Distribution</b>	Indian subcontinent, Africa, Hawaiian Islands	
<b>Source locality(s)</b>	Natural stand and planted	
<b>Date(s) of planting</b>	13.11.2003; 13.08.2004	
<b>Accession number (s)</b>	KFRI-AB 764, KFRI-AB 765; KFRI-AB 1031; KFRI-AB 1033 to KFRI-AB 1051; KFRI-AB 695, KFRI-AB 3696	
<b>Quadrat number(s)</b>	8, 9	
<b>Description</b>	<b>Habit</b>	Trees, 8-10 m high, bark greyish or bluish-green, thin, rough with spreading branches and pubescent branchlets.
	<b>Leaves</b>	Simple, alternate, 5-15 x 2.5-3.5 cm, obliquely ovate, crenate, serrulate, rough above, pubescent below, unequal sided, subcordate or rounded at base, acuminate at apex.
	<b>Flowers</b>	White bisexual in terminal or axillary drooping panicles
	<b>Fruits and seeds</b>	Drupes black when ripe, up to 0.5 cm in diameter, ovoid or globose tipped by the persistent style at apex; seeds small, globose.
<b>Flowers and fruits</b>	February - May	
<b>Notes</b>	Seeds germinate by about 60 per cent. Field-planted seedlings attain an average height of 482 cm with in a period of 4.5 years.	

<b>159. <i>Trema orientalis</i> (L.) Bl.</b>		
<b>Family</b>	<b>Ulmaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Celtis orientalis</i> L.; <i>Sponia wightii</i> Planch.	
<b>Local name(s)</b>	Aamathali, Amapotti	
<b>Distribution</b>	Tropical Africa, Asia and Australia	
<b>Source locality(s)</b>	Natural stand	
<b>Date(s) of planting</b>	Not planted	
<b>Accession number(s)</b>	KFRI-AB 810	
<b>Quadrat number(s)</b>	67	
<b>Description</b>	<b>Habit</b>	Trees, 8-10 m high, bark greyish or bluish-green, thin, rough with spreading branches and pubescent branchlets.
	<b>Leaves</b>	Simple, 5-15 x 2.5-3.5 cm, obliquely ovate, crenate, serrulate, rough above, pubescent below, unequal sided, subcordate or rounded at base, acuminate at apex.
	<b>Flowers</b>	Greenish white, unisexual in axillary cymes; male ones sessile, compact than the female, usually on different trees.
	<b>Fruits and seeds</b>	Drupes black when ripe, up to 0.5 cm in diameter, ovoid or globose tipped by the persistent style; seeds small, globose.
<b>Flowers and fruits</b>	September - December	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 250 cm with in a period of 1 year.	

<b>160. <i>Trewia nudiflora</i> L.</b>		
<b>Family</b>	<b>Euphorbiaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Trewia polycarpa</i> Benth.	
<b>Local name(s)</b>	Malakumbil, Pambarakumbil	
<b>Distribution</b>	South Asia	
<b>Source locality(s)</b>	Dhoni (Palakkad)	
<b>Date(s) of planting</b>	22.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2290 to KFRI-AB 2293; KFRI-AB-2296 to KFRI-AB 2314	
<b>Quadrat number(s)</b>	37, 38, 42	
<b>Description</b>	<b>Habit</b>	Trees, 8-12 m high, with smooth grey bark, soft white wood and young shoots and leaves beneath clothed with cottony wool, sometimes almost glabrous.
	<b>Leaves</b>	Simple, opposite, decussate, 5-15 x 3-11 cm, ovate, entire, glabrous above, glaucous beneath, cordate at base, acuminate at apex.
	<b>Flowers</b>	Greenish white, dioecious in axillary racemes; male flowers numerous on long peduncle; female flowers 4-5, tepals 3-5, tomentose beneath, caudicous.
	<b>Fruits and seeds</b>	Capsules globose, tomentose when young, almost woody; seeds rounded, dark brown, polished, compressed, ellipsoid to globose.
<b>Flowers and fruits</b>	May - November	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 127 cm with in a period of 2.5 years.	

<b>161. <i>Trichilia connaroides</i> (Wt. et Arn.)Bentv.</b>		
<b>Family</b>	<b>Meliaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Zanthoxylum connaroides</i> Wt. et Arn.	
<b>Local name(s)</b>	Karuvilangam, Korakkadi	
<b>Distribution</b>	Indo-Malesia	
<b>Source locality(s)</b>	Pattikkad (Thrissur)	
<b>Date(s) of planting</b>	27.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3013 to KFRI-AB 3015	
<b>Quadrat number(s)</b>	36	
<b>Description</b>	<b>Habit</b>	Trees up to 15 m high; bark 12 mm thick, reddish-brown or ash coloured, rough, warty; branchlets reddish.
	<b>Leaves</b>	Imparipinnate, leaflets 5-11, 5-15 x 2.5-7 cm, ovate, ovate-oblong, entire, glabrous, glaucous beneath, oblique at base, acuminate or shortly caudate-acuminate at apex.
	<b>Flowers</b>	Bisexual, 6-8 mm across, white in axillary corymbose panicles. Pedicels articulated. Anthers exerted
	<b>Fruits and seeds</b>	Capsules globose, bright red, pointed, 2 valved; seed one, yellowish brown, surrounded by fleshy aril.
<b>Flowers and fruits</b>	March - September	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 250 cm with in a period of 2.5 years.	

<b>162. <i>Vateria indica</i> L.</b>		
<b>Family</b>	<b>Dipterocarpaceae</b>	
<b>Basionym/synonym(s)</b>	<i>V. malabarica</i> Bl.	
<b>Local name(s)</b>	Vellappayin, Payin, Vellakunthiricum	
<b>Distribution</b>	Peninsular India in the Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	15.11.2003	
<b>Accession number (s)</b>	KFRI-AB 1125 to KFRI-AB 1147	
<b>Quadrat number(s)</b>	16, 20	
<b>Description</b>	<b>Habit</b>	Trees, up to 30 m high and 2-3.5 m in girth with resinous smooth, grey bark and hoary-stellate pubescent branchlets.
	<b>Leaves</b>	Simple, 7-20 x 5-10 cm with 14 pairs of nerves, glabrous, elliptic or obovate, bright red when young, narrowed at base, acuminate at apex.
	<b>Flowers</b>	White, fragrant in drooping terminal or axillary corymbose panicles; densely stellate puberulus. Sepals 5 covered with stellate hairs; petals 5, spreading.
	<b>Fruits and seeds</b>	Capsules pale brown, trivalved, 5-7 x 3-4 cm, unilocular with the single large seed completely filling the fruit cavity; seeds ellipsoid, oblong.
<b>Flowers and fruits</b>	January - March; May - July	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 265 cm with in a period of 5 years.	



<b>163. <i>Vateria macrocarpa</i> B. L. Gupta</b>		
<b>Family</b>	Dipterocarpaceae	
<b>Basionym/synonym(s)</b>	Nil	
<b>Local name(s)</b>	Vellappayin, Vellakunthirikkam	
<b>Distribution</b>	Peninsular India in the southern Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Muthikulam (Palakkad)	
<b>Date(s) of planting</b>	12.11.2003; 15.11.2003	
<b>Accession number(s)</b>	KFRI-AB 1001, KFRI-AB 1003; KFRI-AB 1167, KFRI-AB 1168, KFRI-AB 1170; KFRI-AB 1174 to KFRI-AB 1176	
<b>Quadrant number(s)</b>	16, 20, 24	
<b>Description</b>	<b>Habit</b>	Trees, 20-25 m high with grey bark mottled with white and green, smooth; exudation resinous, pale yellowish white.
	<b>Leaves</b>	Simple, 15-25 x 6-12 cm, elliptic-oblong or oblong-lanceolate, entire, coriaceous, glabrous, rounded or subcordate at base, shortly acuminate at apex.
	<b>Flowers</b>	Creamy white in axillary, hoary-stellate, pubescent panicles, shorter than the leaves and densely tomentose ovary.
	<b>Fruits and seeds</b>	Capsules cylindric, lanceolate, 11 x 6 cm, broadly ovate, coriaceous, splitting from top downwards into 3; seed 1, ellipsoid, oblong.
<b>Flowers and fruits</b>	March - June	
<b>Notes</b>	Field-planted seedlings attain an average height of 89.4 cm with in a period of 4.5 years.	

<b>164. <i>Vitex altissima</i> L.f.</b>		
<b>Family</b>	Verbenaceae	
<b>Basionym/synonym(s)</b>	<i>Vitex alata</i> Heyne ex Roth	
<b>Local name(s)</b>	Mylellu	
<b>Distribution</b>	India, Indo-China, Malesia, Sri Lanka	
<b>Source locality(s)</b>	Vazhachal (Thrissur)	
<b>Date(s) of planting</b>	21.06.2005	
<b>Accession number(s)</b>	KFRI-AB 2028 to KFRI-AB 2052; KFRI-AB 3668 to KFRI-AB 3669	
<b>Quadrant number(s)</b>	11, 15, 32	
<b>Description</b>	<b>Habit</b>	Trees, 15-20 m high with grey scaly bark and drooping, minutely tomentose branches.
	<b>Leaves</b>	Tri or rarely pentafoliate; leaflets sessile, 9-14 x 2.5-3.5 cm, lanceolate, entire, glabrous above, pubescent along the nerves below, acute at base, acuminate at apex.
	<b>Flowers</b>	Bisexual, white tinged with blue in shortly pedunculate or sessile cymes, clustered along the branches of terminal panicles.
	<b>Fruits and seeds</b>	Drupes purple, up to 1.5 cm in diameter, irregularly globose, with enlarged calyx; seeds 4, obovate.
<b>Flowers and fruits</b>	April - May; July - August	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 246 cm with in a period of 2.5 years.	

<b>165. <i>Walsura trifolia</i> (A. Juss.) Harms.</b>		
<b>Family</b>	Meliaceae	
<b>Basionym/synonym(s)</b>	<i>Heynea trifolia</i> A. Juss.; <i>Walsura piscidia</i> Roxb.	
<b>Local name(s)</b>	Perilla-pacha	
<b>Distribution</b>	India, Sri Lanka	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	18.06.2005	
<b>Accession number(s)</b>	KFRI-AB 3205 to KFRI-AB 3219	
<b>Quadrat number(s)</b>	41	
<b>Description</b>	<b>Habit</b>	Trees, 10-15 m high with smooth, rough, pale brown bark.
	<b>Leaves</b>	Trifoliate; leaflets upto 8 x 3.5 cm, oblong, odd one longer than the laterals, glabrous above, dull glaucous beneath, narrowed at base, acuminate at apex.
	<b>Flowers</b>	Greenish yellow in corymbosely branched terminal and axillary panicles, 0.4 cm long, about equaling leaves; buds globose; petals glabrous.
	<b>Fruits and seeds</b>	Berries brown, 1-1.5 cm long, ovoid, tomentose; seeds 1-2, pale brown, enclosed in fleshy white aril.
<b>Flowers and fruits</b>	November - June	
<b>Notes</b>	Field-planted seedlings attain an average height of 168 cm with in a period of 2.5 years.	

<b>166. <i>Wrightia tinctoria</i> (Roxb.) R. Br.</b>		
<b>Family</b>	Apocynaceae	
<b>Basionym/synonym(s)</b>	<i>Nerium tinctorium</i> Roxb.	
<b>Local name(s)</b>	Dhanthappala, Thondappala, Vettupala, Kambipala	
<b>Distribution</b>	India, Myanmar, Timor	
<b>Source locality(s)</b>	Natural stand and also planted; Peechi (Thrissur)	
<b>Date(s) of planting</b>	04.06.2004	
<b>Accession number(s)</b>	KFRI-AB 788 to KFRI -AB 790; KFRI - AB 1865 to KFRI - AB 1887	
<b>Quadrat number(s)</b>	44, 70, 71, 77	
<b>Description</b>	<b>Habit</b>	Trees up to 12 m high and about 1 m in girth with thick, grey, smooth bark and glabrous branchlets with milky latex.
	<b>Leaves</b>	Simple, distichous, 10.5-15 x 3-4.5 cm, elliptic, obovate or oblong, entire, glabrous above, glaucous beneath, acute or rounded at base, acuminate at apex.
	<b>Flowers</b>	White, fragrant, 2.5 cm across, in lax, terminal cymes appearing along with new leaves. Calyx lobes 5 with membranous margins; corolla salver shaped.
	<b>Fruits and seeds</b>	Follicles green, slender, 25-50 x 5-7.5 cm, pendulous, curved, cylindrical, glabrous, striate; seeds 1-3, black, linear.
<b>Flowers and fruits</b>	February - November	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 148 cm with in a period of 3.5 years.	

<b>167. <i>Xanthophyllum arnottianum</i> Wt.</b>		
<b>Family</b>	<b>Xanthophyllaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Xanthophyllum flavescens sensu</i> Bennett; <i>X. angustifolium</i> Wt.	
<b>Local name(s)</b>	<i>Madakka, Mottal</i>	
<b>Distribution</b>	Peninsular India in the Western Ghats ( <b>Endemic</b> )	
<b>Source locality(s)</b>	Peechi (Thrissur)	
<b>Date(s) of planting</b>	22.12.2005	
<b>Accession number(s)</b>	KFRI-AB 3722 to KFRI-AB 3736	
<b>Quadrat number(s)</b>	76	
<b>Description</b>	<b>Habit</b>	Evergreen trees, up to 10 m high with smooth, greenish-black bark and puberulus brachlets.
	<b>Leaves</b>	Simple, alternate, spiral, estipulate, 5-15 x 3-7.5 cm, ovate-lanceolate or oblong-lanceolate, glabrous and shining with prominent reticulation, obtuse or acute at base, acuminate at apex.
	<b>Flowers</b>	Yellowish white in terminal or axillary, paniced racemes; sepals 5, finely tomentose; petals 5, unequal, lower boat shaped.
	<b>Fruits and seeds</b>	Capsules green, 1.5-2 cm across, subglobose, rugose, one seeded; seeds exalbuminous, estrophiolate.
<b>Flowers and fruits</b>	December - June	
<b>Notes</b>	Seeds germinate by about 90 per cent. Field-planted seedlings attain an average height of 139 cm with in a period of 2.5 years.	

<b>168. <i>Xylia xylocarpa</i> (Roxb.) Taub.</b>		
<b>Family</b>	<b>Mimosaceae</b>	
<b>Basionym/synonym(s)</b>	<i>Mimosa xylocarpa</i> Roxb.; <i>Xylia dolabriformis sensu</i> Bedd.	
<b>Local name(s)</b>	Irumllu	
<b>Distribution</b>	India	
<b>Source locality(s)</b>	Natural stand	
<b>Date(s) of planting</b>	Not planted	
<b>Accession number(s)</b>	KFRI-AB 522 to KFRI-AB 554	
<b>Quadrat number(s)</b>	1, 4, 20, 24, 34, 39, 42, 44, 56, 57, 64, 71, 72, 75, 77, 78, 79, 80	
<b>Description</b>	<b>Habit</b>	Trees 10-20 m high with fluted bole; reddish brown, rough, irregularly flaking bark, tomentose young parts and twiggy branchlets.
	<b>Leaves</b>	Bipinnate; leaflets 2-4 pairs with a gland between each pairs, 6-12 x 2.5-5.5 cm, oblong, glabrous, subcoriaceous, rounded at base, acute at apex.
	<b>Flowers</b>	Yellowish white, in dense, globose heads, 1-2 cm in diameter, with 6-8 cm long peduncles, crowded on short branchlets.
	<b>Fruits and seeds</b>	Pods 8-14 x 2-6.5 cm, woody, oblong, falcate, flat, rusty tomentose, dehiscent; seeds 6-10 per pod, oblong-ellipsoid, brown, compressed.
<b>Flowers and fruits</b>	February - December	
<b>Notes</b>	Seeds germinate by about 72 per cent. Field-planted seedlings attain an average height of 75 cm with in a period of 1 year.	

169. <i>Zizyphus mauritiana</i> Lamk.		
Family	Rhamnaceae	
Basionym/synonym(s)	<i>Z. jujuba</i> Lamk.	
Local name(s)	Ilantha	
Distribution	Paleotropics	
Source locality(s)	Peechi	
Date(s) of planting	23.06.2005	
Accession number(s)	KFRI-AB 2465 to KFRI-AB 2478; KFRI-AB 2480 to KFRI-AB 2483; KFRI-AB 2485	
Quadrat number(s)	7, 11	
Description	Habit	Much branched armed, stunted trees or large shrubs, 3-5 m high; bark dark grey or nearly black with deep vertical cracks; softly pubescent young branches.
	Leaves	Simple, 2-4 x 1.5-3 cm, ovate-elliptic, faintly denticulate, densely tomentose beneath, rounded at base, rounded at apex.
	Flowers	Greenish yellow in axillary clusters or short peduncled axillary cymes. Calyx tube wooly outside, glabrous within; petals 5, rounded at apex, deflexed with the stamens.
	Fruits and seeds	Drupes yellow or orange-coloured when ripe, 1-1.5 cm in diameter, globose, fleshy, smooth with 1-2 loculed stones.
Flowers and fruits	September - October	
Notes	Seeds germinate by about 35-95 per cent. Field-planted seedlings attain an average height of 64 cm in the period of 2.5 years.	

170. <i>Zizyphus xylopyrus</i> (Retz.) Willd.		
Family	Rhamnaceae	
Basionym/synonym(s)	<i>Rhamnus xylopyrus</i> Retz.	
Local name(s)	Kotta	
Distribution	India, Nepal, Sri Lanka	
Source locality(s)	Peechi (Thrissur)	
Date(s) of planting	27.06.2005	
Accession number (s)	KFRI-AB 2991 to KFRI-AB 2992; KFRI-AB 2994; KFRI-AB 2996 to KFRI-AB 2997; KFRI-AB 2999 to KFRI-AB 3005; KFRI-AB 3009; KFRI-AB 3012	
Quadrat number(s)	33, 38	
Description	Habit	Straggling shrubs or trees 4-6 m high; bark thin, brownish grey; branches spiny and covered with grey tomentum when young.
	Leaves	Simple, 2.5-7.5 cm long; elliptic oblong or suborbicular, crenate serrate, often mucronate, glabrous above, white or yellowish tomentum beneath, oblique or cordate at base, mucronate at apex.
	Flowers	Pale white in small dense, pubescent, paniculate cymes; calyx pubescent out side; petals tetramerous, spatulate with long claws.
	Fruits and seeds	Drupes hard and woody, 2-3 cm in diameter, globose, dense grey-tomentose with stones, 2-3 loculed and 2-3 seeded.
Flowers and fruits	April - June; January - April of next year	
Notes	Seeds germinate by about 33 per cent. Field-planted seedlings attain an average height of 32 cm with in the period of 2.5 years.	

## **APPENDIX I**

**Photographs of selected endemic species in the Arboretum**



*Actinodaphne malabarica*



*Aglaia barberi*



*Aglaia lawii*



*Archidendron monadelphum*



*Baccaurea courtallesi*



*Beilschmiedia wightii*





*Calophyllum calaba*



*Cinnamomum malabatum*



*Cordia wallichii*



*Diospyros bourdillonii*



*Diospyros paniculata*



*Dipterocarpus bourdillonii*





*Dipterocarpus indicus*



*Dysoxylum malabaricum*



*Garcinia gummi-gutta*



*Gluta travancorica*



*Holigarna arnottiana*



*Hopea parviflora*





*Hopea racophloea*



*Humboldtia vahliana*



*Kingiodendron pinnatum*



*Litsea coriacea*



*Mastixia arborea*



*Mitragyna tubulosa*





*Myristica beddomei*



*Myristica fatua*



*Nothopegia colebrookeana*



*Otonophelium stipulaceum*



*Palaquium ellipticum*



*Polyalthia fragrans*





*Radermachera xylocarpa*



*Semecarpus travancorica*



*Syzygium palghatense*



*Syzygium travancoricum*



*Vateria indica*



*Vateria macrocarpa*

## **APPENDIX II**

**Layout of quadrats and details of their species contents**

## ARBORETUM: LAYOUT OF QUADRATS

E ← → W

				70	62												
				69	61	53											
				68	60	52											
				67	59	51	47										
				66	Rock	50	46	43	38	33	28						
			74	65	57	49	45	42	37	32	27	23	19	15	11	7	
			73	Rock	56	48	44	41	36	31	26	22	18	14	10	6	3
80	78	76	72	Rock	55	Type-III Quarters		40	35	30	25	21	17	13	9	5	2
79	77	75	71	63	Rock	Type-III Quarters		39	34	29	24	20	16	12	8	4	1
To Peechi				Quarters Gate				Arboretum Gate				To Kannara					

### Details of holding in the Arboretum

Arboretum: size of the area (approximate)	Above 5 ha
No. of quadrats of 25 m x 25 m size	80
No. of existing arborescent stands	716
No. of species of existing arborescent stands	34
No. of species added to the Arboretum	136
<b>No. of seedlings planted in the Arboretum</b>	<b>2373</b>
<b>Total holding of the Arboretum</b>	<b>3089 accessions</b>





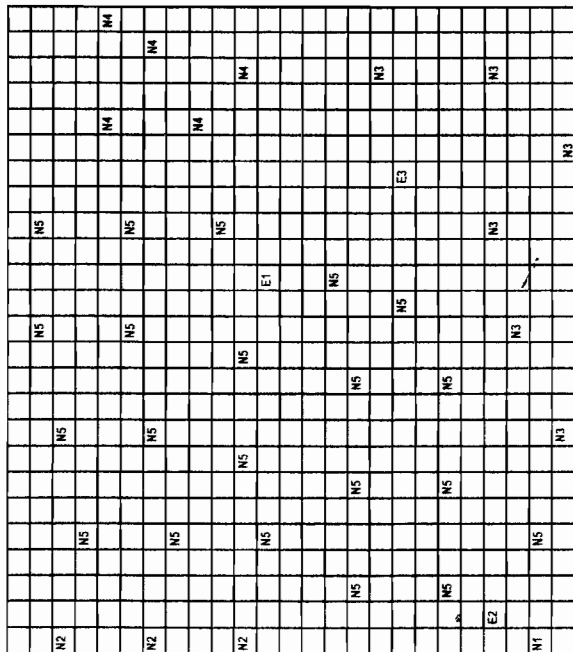








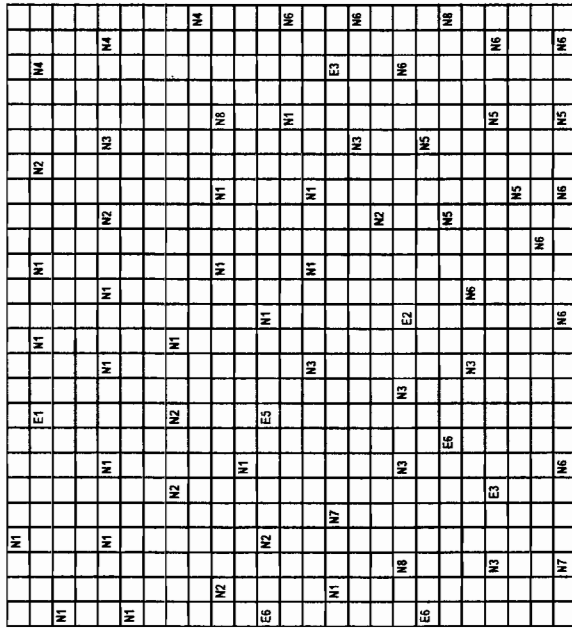
Quadrat No. 11



Existing	
E1	<i>Tectona grandis</i>
E2	<i>Dalbergia lanceolaria</i>
E3	<i>Grewia tilifolia</i>
Total	
	5

Planted	
N1	<i>Actinodaphne malabarica</i>
N2	<i>Ptergota alata</i>
N3	<i>Zizypus mauritanium</i>
N4	<i>Treex altissima</i>
N5	<i>Cordia wallichii</i>
Total	
	36

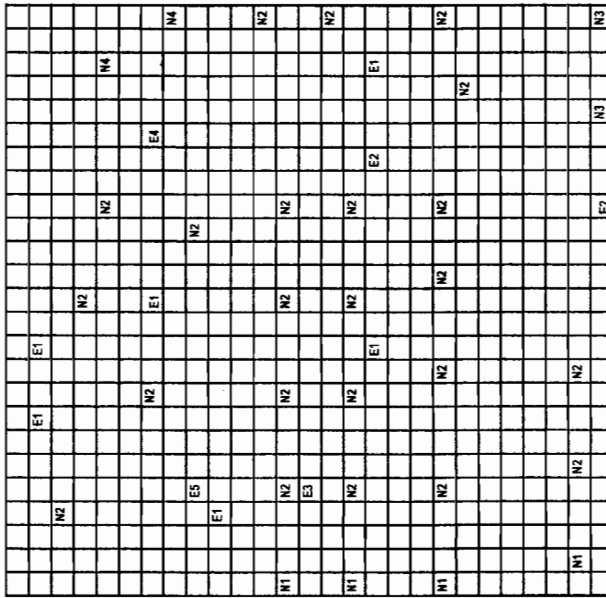
Quadrat No. 12



Existing	
E1	<i>Tectona grandis</i>
E2	<i>Dalbergia lanceolaria</i>
E3	<i>Grewia tilifolia</i>
E4	<i>Terminalia crenulata</i>
E5	<i>Bombax ceiba</i>
E6	<i>Ficus exasperata</i>
Total	
	8

Planted	
N1	<i>Cinnamomum verum</i>
N2	<i>Bauhinia purpurea</i>
N3	<i>Hopea parviflora</i>
N4	<i>Pterocarpus santalinus</i>
N5	<i>Artocarpus heterophyllus</i>
N6	<i>Terminalia bellirica</i>
N7	<i>Polyalthia longifolia</i>
N8	<i>Diospyros paniculata</i>
Total	
	55

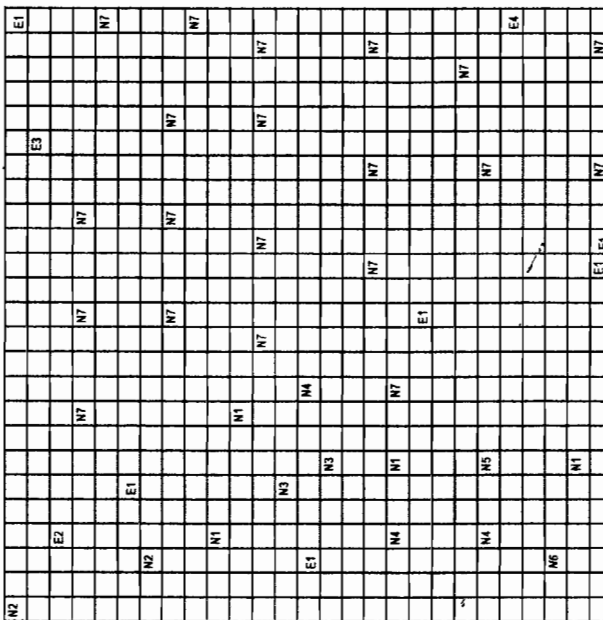
Quadrat No. 14



Planted		
N1	<i>Memecylon umbellatum</i>	4
N2	<i>Litsea coriacea</i>	23
N3	<i>Ptergota alata</i>	2
N4	<i>Calamus travancoricus</i>	2
Total		31

Existing		
E1	<i>Tectona grandis</i>	6
E2	<i>Dalbergia lanceolaria</i>	2
E3	<i>Pterocarpus marsupium</i>	1
E4	<i>Bombax ceiba</i>	1
E5	<i>Caryota arens</i>	1
Total		11

Quadrat No. 13

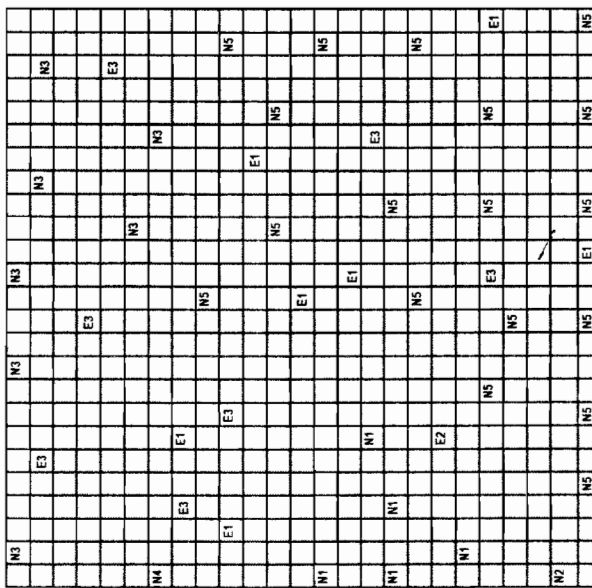


Planted		
N1	<i>Hloea parviflora</i>	4
N2	<i>Pterocarpus santalinus</i>	2
N3	<i>Terminalia bellirica</i>	2
N4	<i>Bauhinia purpurea</i>	3
N5	<i>Oroxylum indicum</i>	1
N6	<i>Erythrina stricta</i>	1
N7	<i>Memecylon umbellatum</i>	20
Total		33

Existing		
E1	<i>Tectona grandis</i>	5
E2	<i>Pterocarpus marsupium</i>	1
E3	<i>Bombax ceiba</i>	1
E4	<i>Strychnos nux vomica</i>	1
Total		8



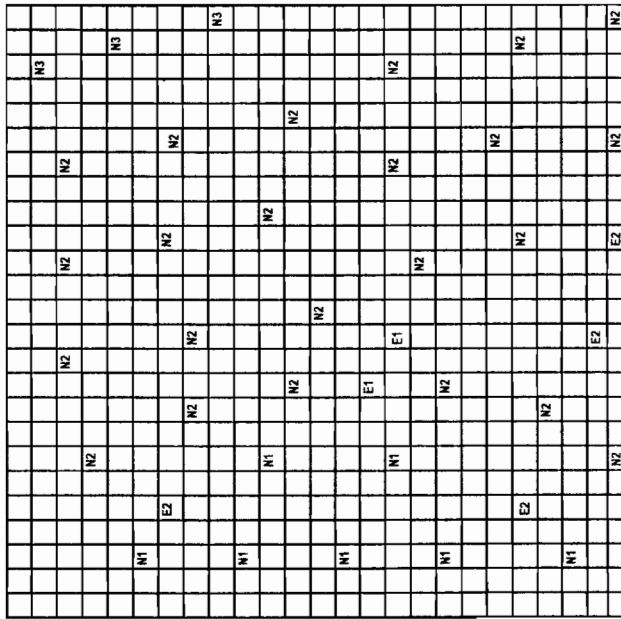
Quadrat No. 17



Existing		
E1	<i>Tectona grandis</i>	6
E2	<i>Pterocarpus marsupium</i>	1
E3	<i>Dalbergia lanceolaria</i>	7
Total		14

Planted		
N1	<i>Pterocarpus santalinus</i>	5
N2	<i>Hopea parviflora</i>	1
N3	<i>Aporosa lindleyana</i>	7
N4	<i>Holoptilea integrifolia</i>	1
N5	<i>Archidendron monadelphum</i>	18
Total		32

Quadrat No. 18

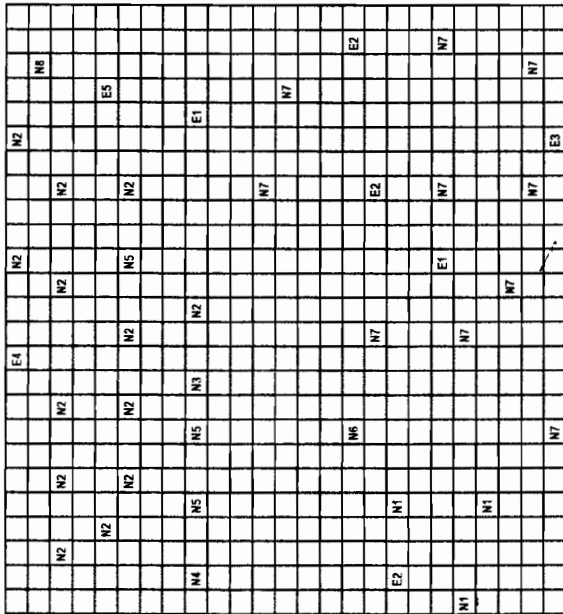


Existing		
E1	<i>Tectona grandis</i>	2
E2	<i>Dalbergia lanceolaria</i>	4
Total		6

Planted		
N1	<i>Archidendron monadelphum</i>	7
N2	<i>Dimocarpus longan</i>	23
N3	<i>Schleichera oleosa</i>	3
Total		33



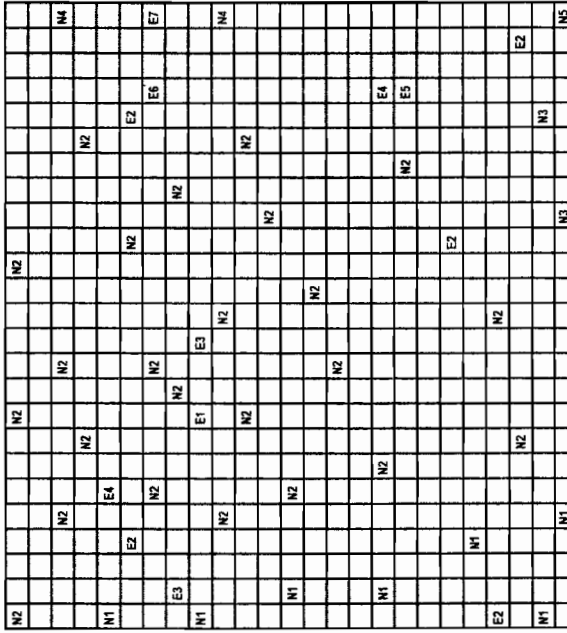
Quadrat No. 21



Existing	
E1	<i>Tectona grandis</i>
E2	<i>Dalbergia lanceolaria</i>
E3	<i>Pterocarpus marsupium</i>
E4	<i>Terminalia heliotrica</i>
E5	<i>Bombax ceiba</i>
	<b>Total</b>
	9

Planted	
N1	<i>Pterocarpus santalinus</i>
N2	<i>Garcinia gummi-gutta</i>
N3	<i>Terminalia catappa</i>
N4	<i>Canarium strictum</i>
N5	<i>Ilanopsis integrifolia</i>
N6	<i>Barringtonia acutangula</i>
N7	<i>Aporosa lindleyana</i>
N8	<i>Schleichera oleosa</i>
	<b>Total</b>
	33

Quadrat No. 22

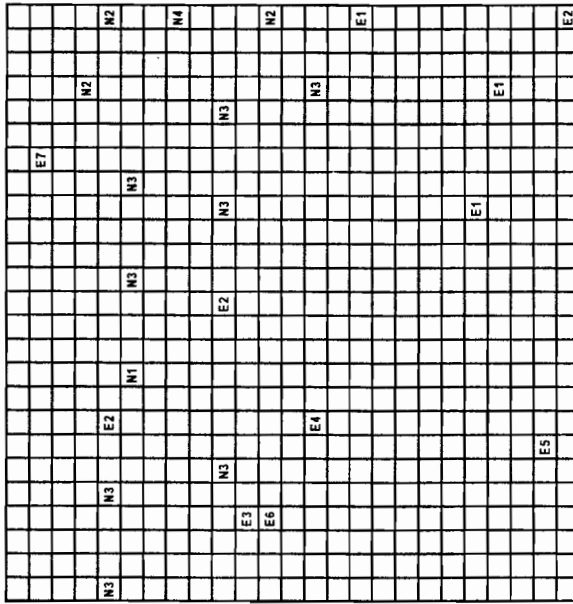


Existing	
E1	<i>Tectona grandis</i>
E2	<i>Dalbergia lanceolaria</i>
E3	<i>Bombax ceiba</i>
E4	<i>Strychnos nux-vomica</i>
E5	<i>Allanthurus triphysa</i>
E6	<i>Ficus exasperata</i>
E7	<i>Ficus daltoniae</i>
	<b>Total</b>
	13

Planted	
N1	<i>Aporosa lindleyana</i>
N2	<i>Harpullia arborea</i>
N3	<i>Dimocarpus lagani</i>
N4	<i>Schleichera oleosa</i>
N5	<i>Sterculia guntata</i>
	<b>Total</b>
	36



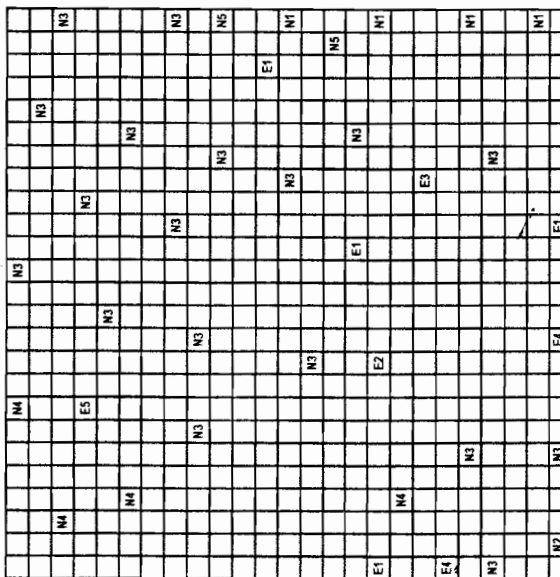
Quadrat No. 24



Planted	
N1	<i>Vateria macrocarpa</i> 1
N2	<i>Emblica officinalis</i> 3
N3	<i>Holoptelea integrifolia</i> 8
N4	<i>Gluta travancorica</i> 1
Total 14	

Existing	
E1	<i>Tectona grandis</i> 2
E2	<i>Perocarpus marsupium</i> 3
E3	<i>Terminalia paniculata</i> 1
E4	<i>Terminalia eriantha</i> 1
E5	<i>Xylocarpus</i> 1
E6	<i>Grewia tilifolia</i> 1
E7	<i>Lagerstroemia macrocarpa</i> 1
Total 10	

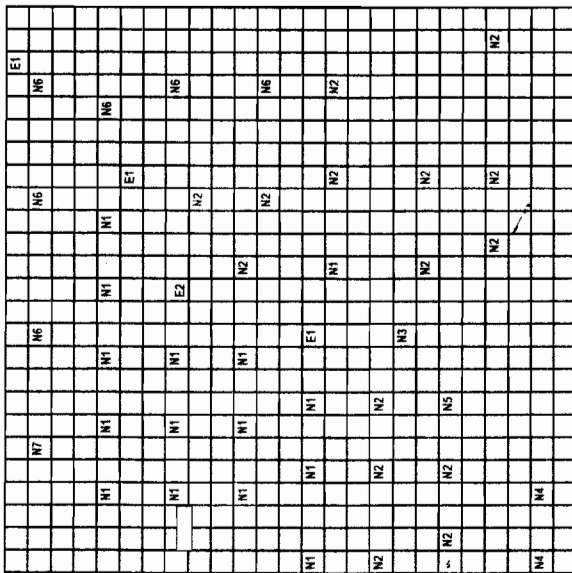
Quadrat No. 23



Planted	
N1	<i>Peltophorum pterocarpum</i> 3
N2	<i>Polyalthia fragrans</i> 8
N3	<i>Sterculia guttata</i> 18
N4	<i>Schleichera oleosa</i> 4
N5	<i>Calamus prasinus</i> 2
Total 36	

Existing	
E1	<i>Tectona grandis</i> 4
E2	<i>Dalbergia lanceolaria</i> 1
E3	<i>Bombax celtia</i> 1
E4	<i>Grewia tilifolia</i> 2
E5	<i>Astonia scholaris</i> 1
Total 9	

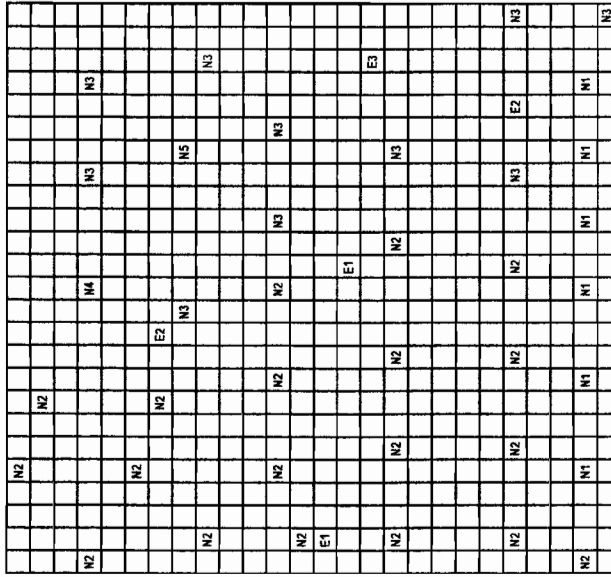
Quadrat No. 25



Existing	
E1	3
E2	1
<b>Total</b>	<b>4</b>

Planted	
N1	21
N2	15
N3	1
N4	2
N5	1
N6	6
N7	1
<b>Total</b>	<b>40</b>

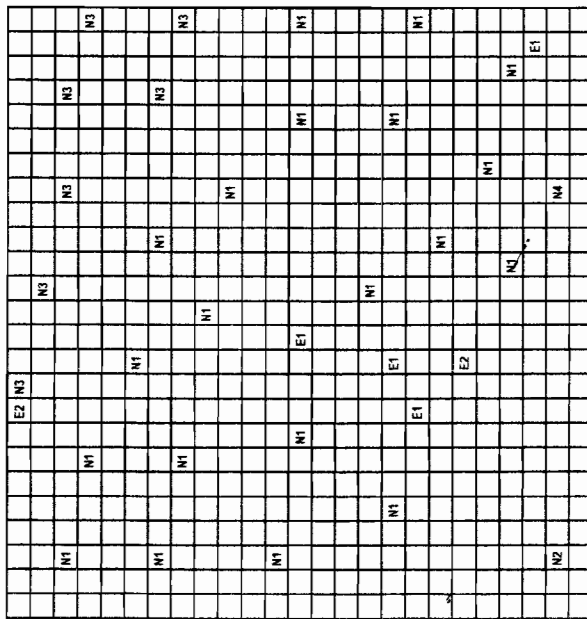
Quadrat No. 26



Existing	
E1	2
E2	2
E3	1
<b>Total</b>	<b>5</b>

Planted	
N1	6
N2	19
N3	10
N4	1
N5	1
<b>Total</b>	<b>37</b>

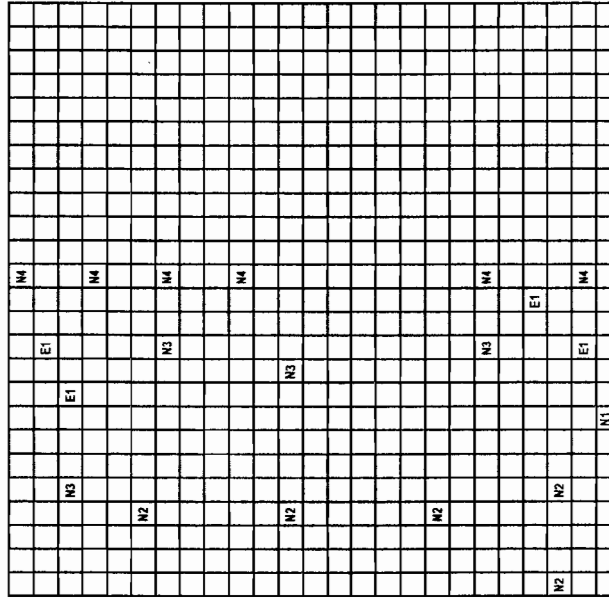
Quadrat No. 27



Existing		
E1	<i>Tectona grandis</i>	3
E2	<i>Bambusa bambos</i>	1
E3	<i>Briedelia atris-shawii</i>	1
Total		6

Planted		
N1	<i>Bauhinia racemosa</i>	20
N2	<i>Aporosa lindleyana</i>	1
N3	<i>Lagerstroemia microcarpa</i>	7
N4	<i>Sterculia guttata</i>	1
Total		29

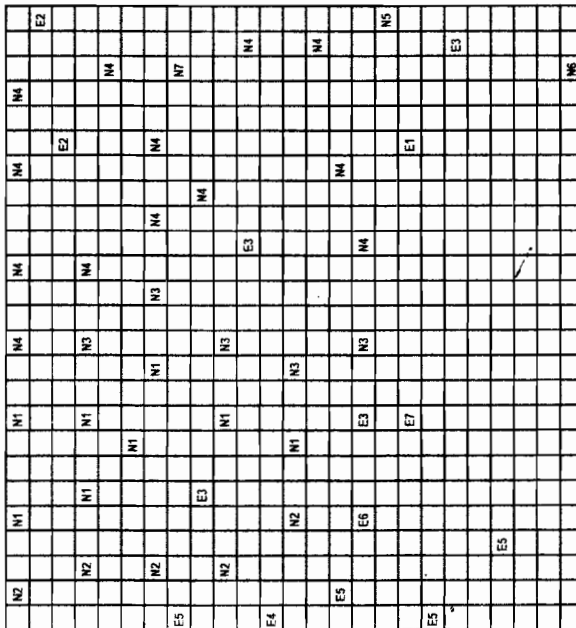
Quadrat No. 28



Existing		
E1	<i>Tectona grandis</i>	4
Total		4

Planted		
N1	<i>Pelophorum pterocarpum</i>	1
N2	<i>Bauhinia racemosa</i>	5
N3	<i>Lagerstroemia microcarpa</i>	4
N4	<i>Calamus vatayilla</i>	6
Total		16

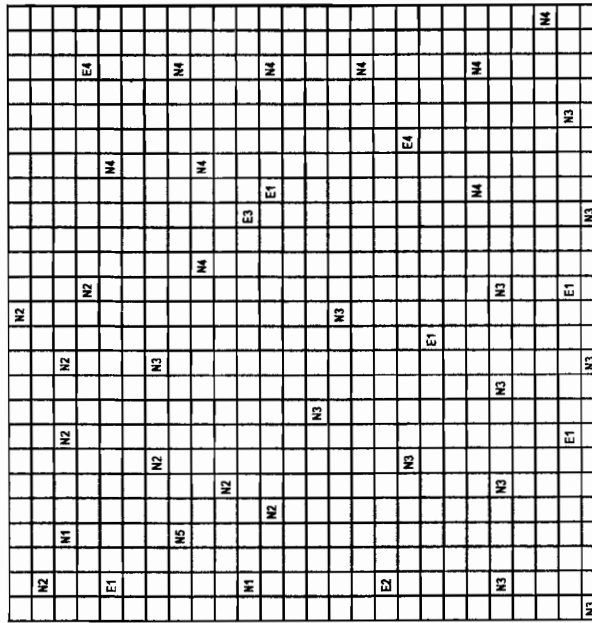
Quadrat No. 29



Existing		Planted	
E1	<i>Tectona grandis</i>	N1	<i>Swietenia macrophylla</i>
E2	<i>Dalbergia lan-oulata</i>	N2	<i>Terminalia bellirica</i>
E3	<i>Pterocarpus marsupium</i>	N3	<i>Mimusops elengi</i>
E4	<i>Terminalia crenulata</i>	N4	<i>Albizia lebbek</i>
E5	<i>Terminalia paniculata</i>	N5	<i>Holoptelea integrifolia</i>
E6	<i>Bombax ceiba</i>	N6	<i>Mastixia arborea</i>
E7	<i>Lagerstroemia microcarpa</i>	Total	33
	Total		14

N1	<i>Albizia lebbek</i>	2
N2	<i>Gmelina arborea</i>	8
N3	<i>Mastixia arborea</i>	12
N4	<i>Aglaia barberi</i>	9
N5	<i>Oroxylum indicum</i>	1
Total		32

Quadrat No. 30

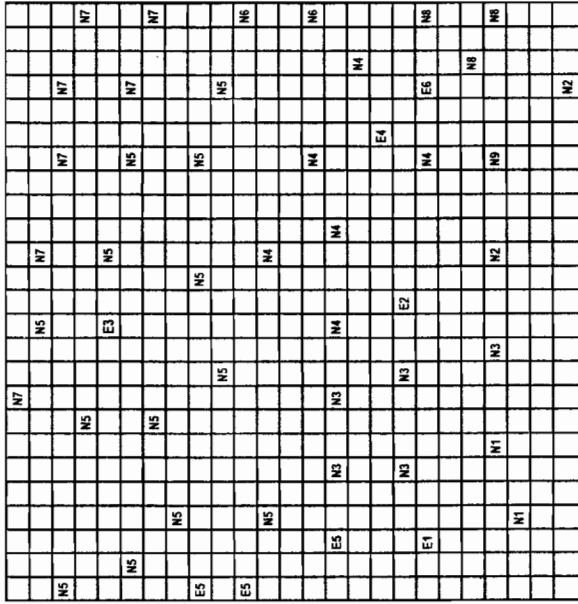


Existing		Planted	
E1	<i>Tectona grandis</i>	N1	<i>Albizia lebbek</i>
E2	<i>Terminalia bellirica</i>	N2	<i>Gmelina arborea</i>
E3	<i>Caryota urens</i>	N3	<i>Mastixia arborea</i>
E4	<i>Dalbergia lanceolata</i>	N4	<i>Aglaia barberi</i>
Total	9	N5	<i>Oroxylum indicum</i>
		Total	32

E1	<i>Tectona grandis</i>	5
E2	<i>Terminalia bellirica</i>	1
E3	<i>Caryota urens</i>	1
E4	<i>Dalbergia lanceolata</i>	2
Total		9



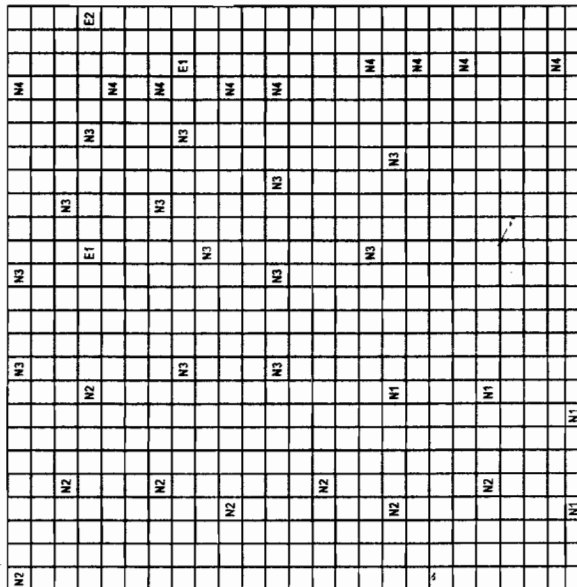
Quadrat No. 34



Existing	
E1	<i>Tectona grandis</i> 1
E2	<i>Dalbergia lanceolaria</i> 1
E3	<i>Pterocarpus marsupium</i> 1
E4	<i>Xylocarpus xylocarpus</i> 1
E5	<i>Terminalia crenulata</i> 3
E6	<i>Caryota urens</i> 1
Total 8	

Planted	
N1	<i>Swietenia macrophylla</i> 2
N2	<i>Athizia lebeck</i> 3
N3	<i>Swietenia mahagoni</i> 5
N4	<i>Mimosaops elongi</i> 5
N5	<i>Caesalpinia cortaria</i> 13
N6	<i>Terminalia arjuna</i> 2
N7	<i>Athizia odoratissima</i> 7
N8	<i>Gmelina arborea</i> 3
N9	<i>Artocarpus heterophyllus</i> 1
Total 43	

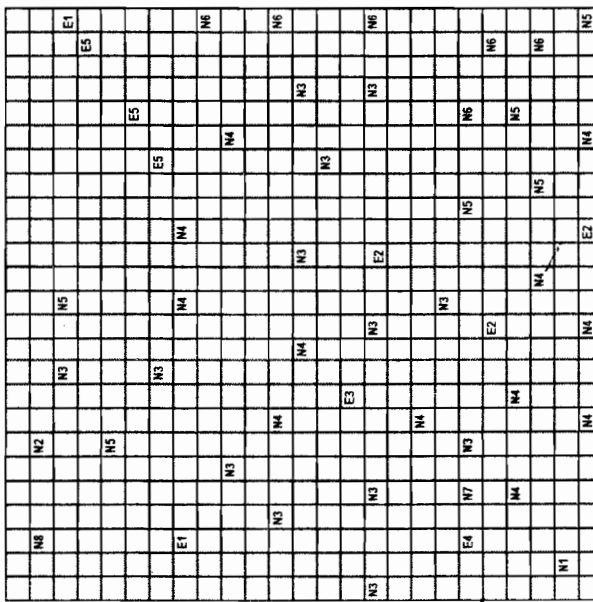
Quadrat No. 33



Existing	
E1	<i>Tectona grandis</i> 1
E2	<i>Bambusa bambos</i> 3
Total 4	

Planted	
N1	<i>Lagerstroemia microcarpa</i> 4
N2	<i>Azadirachta indica</i> 8
N3	<i>Zizyphus xylopyrus</i> 13
N4	<i>Calamus thwaitesii</i> 9
Total 34	

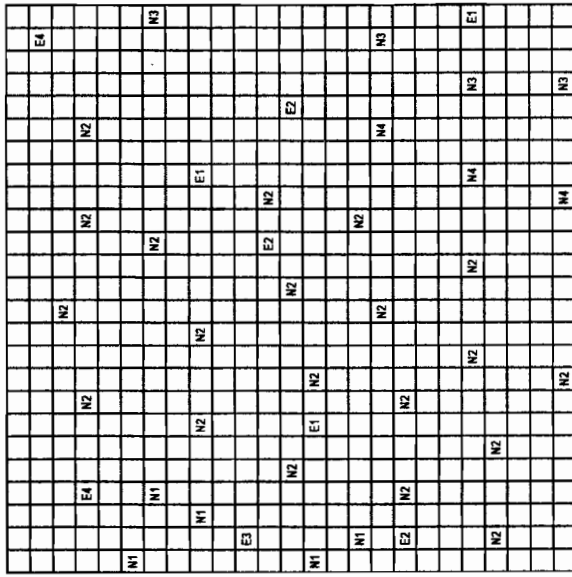
Quadrat No. 35



Existing	
E1	<i>Tectona grandis</i>
E2	<i>Dalbergia lanceolaria</i>
E3	<i>Terminalia paniculata</i>
E4	<i>Crewia tilifolia</i>
E5	<i>Toona ciliata</i>
Total	
	10

Planted	
N1	<i>Albizia lebbek</i>
N2	<i>Albizia odoratissima</i>
N3	<i>Terminalia arjuna</i>
N4	<i>Gmelina arborea</i>
N5	<i>Artocarpus hirsutus</i>
N6	<i>Artocarpus heterophyllus</i>
N7	<i>Canarium strictum</i>
N8	<i>Barringtonia acutangula</i>
Total	
	41

Quadrat No. 36



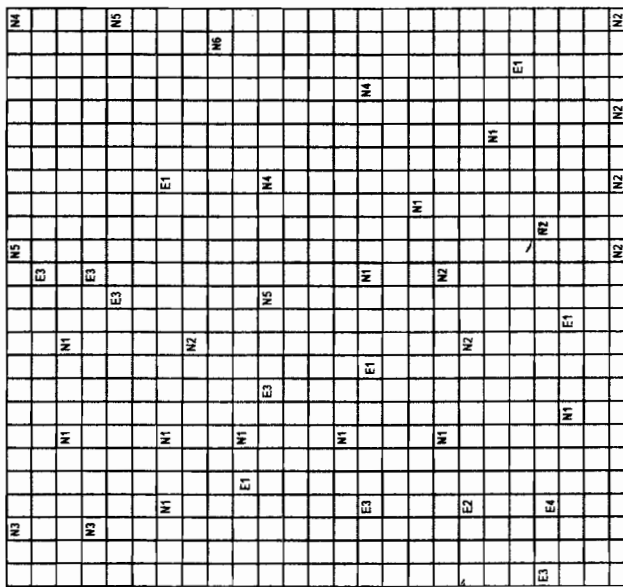
Existing	
E1	<i>Tectona grandis</i>
E2	<i>Dalbergia lanceolaria</i>
E3	<i>Alstonia scholaris</i>
E4	<i>Strychnos nux vomica</i>
Total	
	9

Planted	
N1	<i>Gmelina arborea</i>
N2	<i>Antiaris toxicaria</i>
N3	<i>Strychnos nux vomica</i>
N4	<i>Trichilia conmaroides</i>
Total	
	32





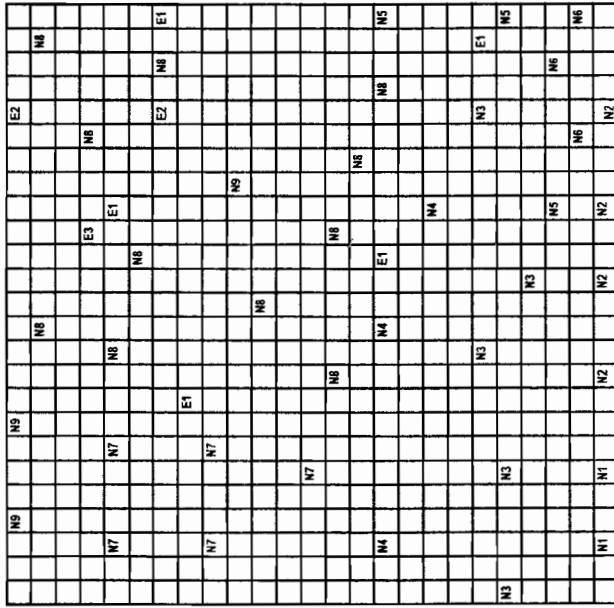
Quadrat No. 39



Existing	
E1	<i>Tectona grandis</i>
E2	<i>Xylocarpus</i>
E3	<i>Terminalia crenulata</i>
E4	<i>Terminalia paniculata</i>
Total	
	13

Planted	
N1	<i>Caesalpinia coriaria</i>
N2	<i>Albizia odoratissima</i>
N3	<i>Terminalia catappa</i>
N4	<i>Firmiana colorata</i>
N5	<i>Gymnacranthera farquhariana</i>
N6	<i>Lagerstroemia microcarpa</i>
Total	
	28

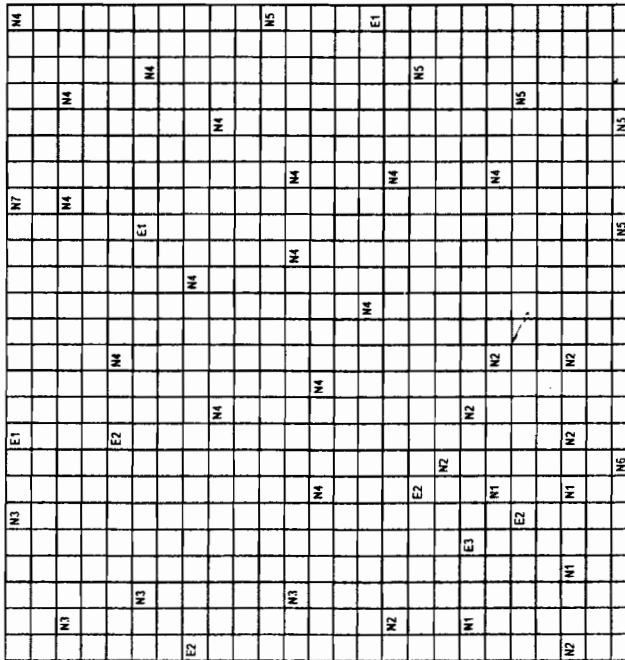
Quadrat No. 40



Existing	
E1	<i>Tectona grandis</i>
E2	<i>Dalbergia lanceolaria</i>
E3	<i>Terminalia paniculata</i>
Total	
	8

Planted	
N1	<i>Albizia odoratissima</i>
N2	<i>Artocarpus heterophyllus</i>
N3	<i>Ficus religiosa</i>
N4	<i>Artocarpus hirsutus</i>
N5	<i>Melia dubia</i>
N6	<i>Aphanamixis polystachya</i>
N7	<i>Firmiana colorata</i>
N8	<i>Palaquium ellipticum</i>
N9	<i>Gymnacranthera farquhariana</i>
Total	
	39

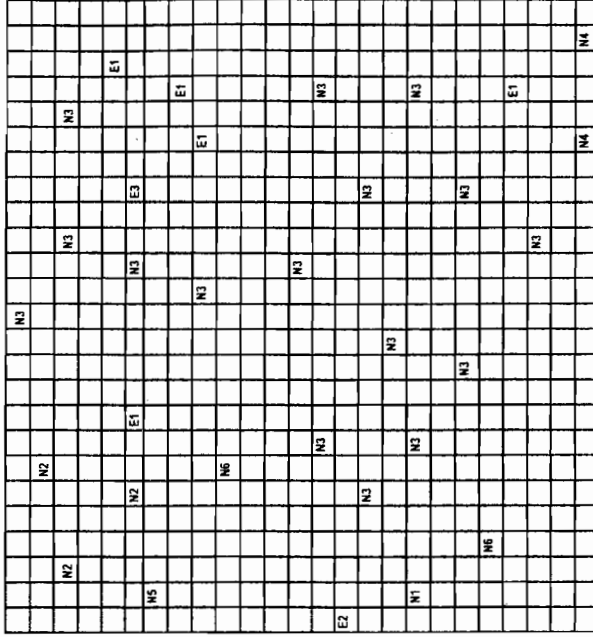
Quadrat No. 41



Existing	
E1	<i>Tectona grandis</i>
E2	<i>Dalbergia lanceolaria</i>
E3	<i>Alstonia scholaris</i>
Total	
8	

Planted	
N1	<i>Melia italica</i>
N2	<i>Artocarpus hirsutus</i>
N3	<i>Palaquium ellipticum</i>
N4	<i>Balsara trifolia</i>
N5	<i>Mesua ferrea</i>
N6	<i>Antiaris toxicaria</i>
N7	<i>Gymnacranthera farquhariana</i>
Total	
37	

Quadrat No. 42



Existing	
E1	<i>Tectona grandis</i>
E2	<i>Nyctia xylocarpa</i>
E3	<i>Bombax ceiba</i>
Total	
8	

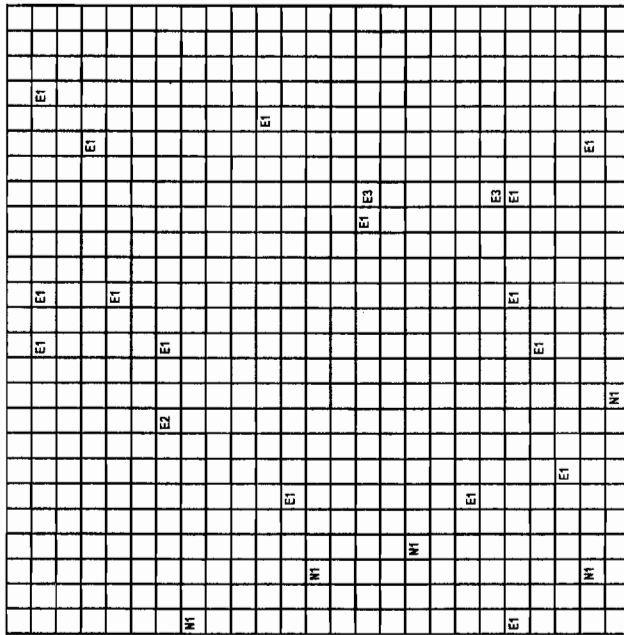
Planted	
N1	<i>Calophyllum calaba</i>
N2	<i>Aglaia lawii</i>
N3	<i>Diospyros montana</i>
N4	<i>Trewia nudiflora</i>
N5	<i>Barringtonia acutangula</i>
N6	<i>Diospyros ebeny</i>
Total	
25	







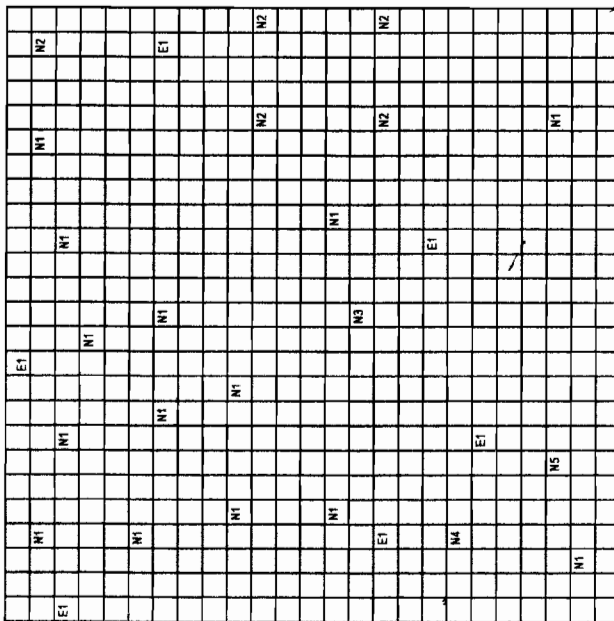
Quadrat No. 50



Existing	
E1	14
E2	1
E3	1
Total	
	16

Planted	
N1	5
Total	
	5

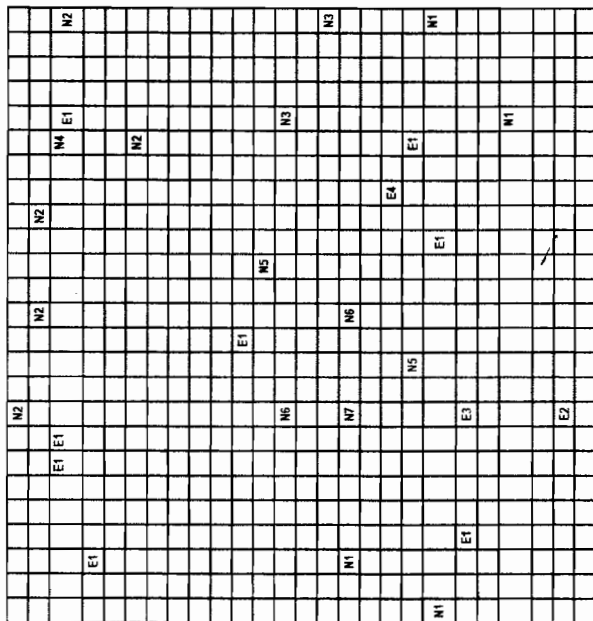
Quadrat No. 49



Existing	
E1	6
Total	
	6

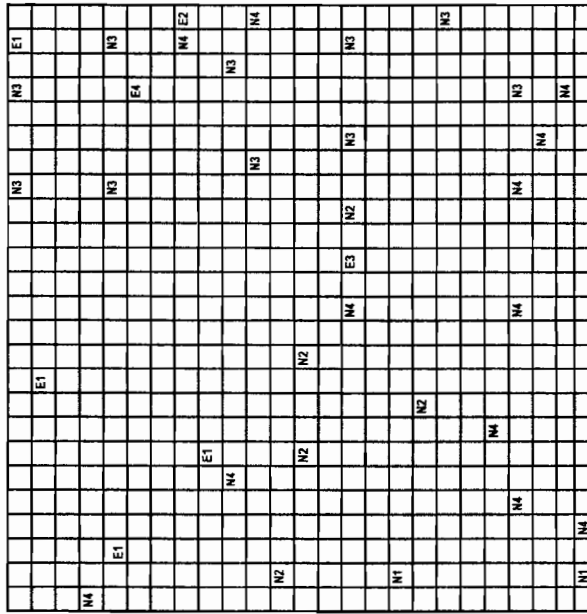
Planted	
N1	14
N2	5
N3	1
N4	1
N5	1
Total	
	22

Quadrat No. 51



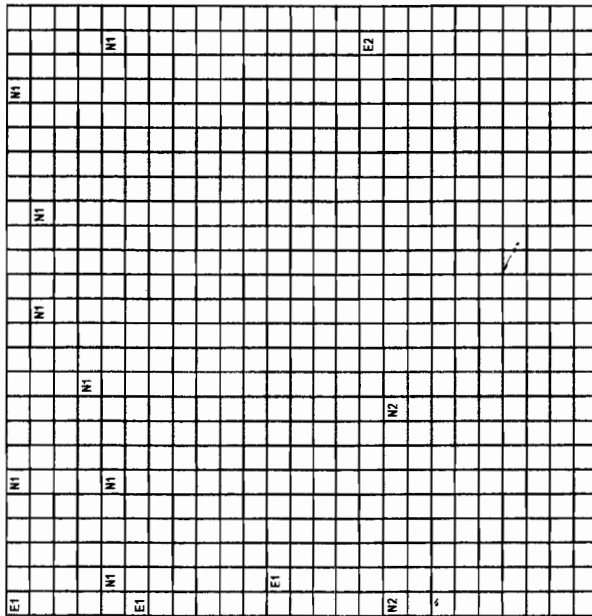
Existing		Planted	
E1	<i>Tectona grandis</i>	N1	<i>Diospyros sylvatica</i>
E2	<i>Dalbergia lanceolaria</i>	N2	<i>Acacia leucophloea</i>
E3	<i>Corymba urens</i>	N3	<i>Acacia mellifera</i>
E4	<i>Cassia fistula</i>	N4	<i>Calamus rotang</i>
	Total	N5	<i>Syzygium travancoricum</i>
		N6	<i>Gynacranthera farguhariana</i>
		N7	<i>Myristica fatua</i>
			Total
			17

Quadrat No. 52



Existing		Planted	
E1	<i>Tectona grandis</i>	N1	<i>Diospyros sylvatica</i>
E2	<i>Dalbergia lanceolaria</i>	N2	<i>Acacia mellifera</i>
E3	<i>Dalbergia sissonoides</i>	N3	<i>Acacia ferruginea</i>
E4	<i>Grewia tilifolia</i>	N4	<i>Calamus rotang</i>
	Total		Total
			29

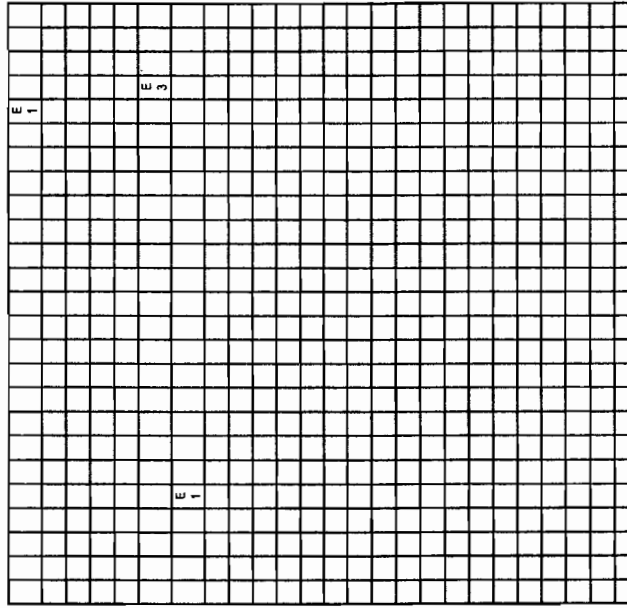
Quadrat No. 53



Planted	
N1	<i>Sterculia urens</i>
N2	<i>Calamus rotang</i>
Total	

Existing	
E1	<i>Tecoma grandis</i>
E2	<i>Ficus hispida</i>
Total	

Quadrat No. 54



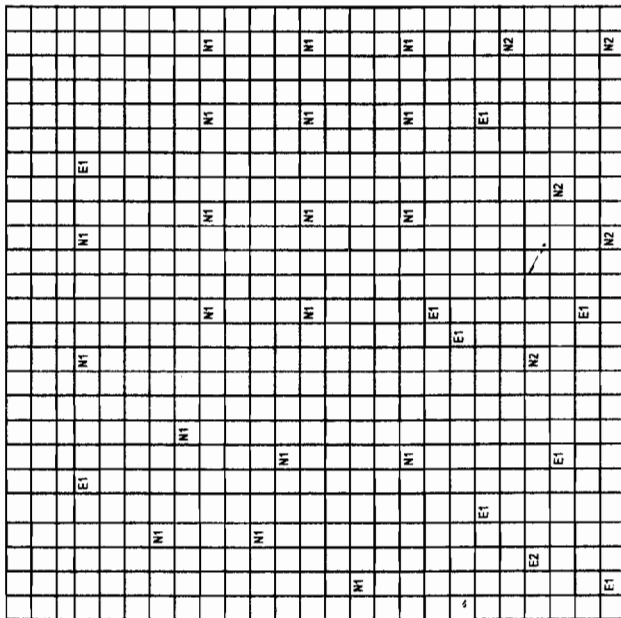
Rocky area: Only few natural stands

Existing	
E1	<i>Tecoma grandis</i>
E2	<i>Glyricida sepium</i>
Total	





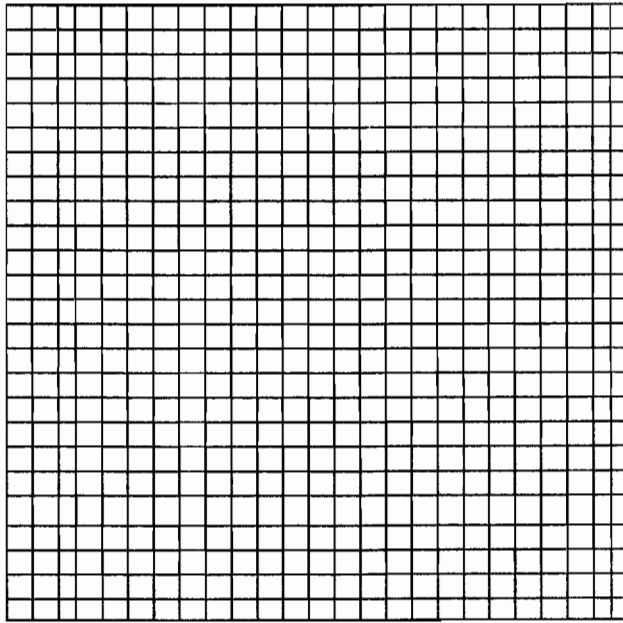
Quadrat No. 57



Existing	
E1	<i>Tectona grandis</i> 0
E2	<i>Xylocarpus</i> 1
	Total 10

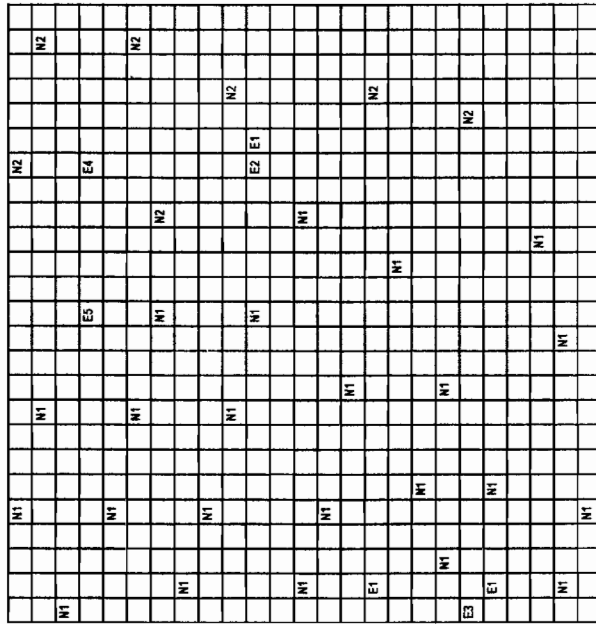
Planted	
N1	<i>Acacia nilotica</i> 19
N2	<i>Albizia amara</i> 5
	Total 24

Quadrat No. 58



Rocky area: No natural stand or planted seedlings

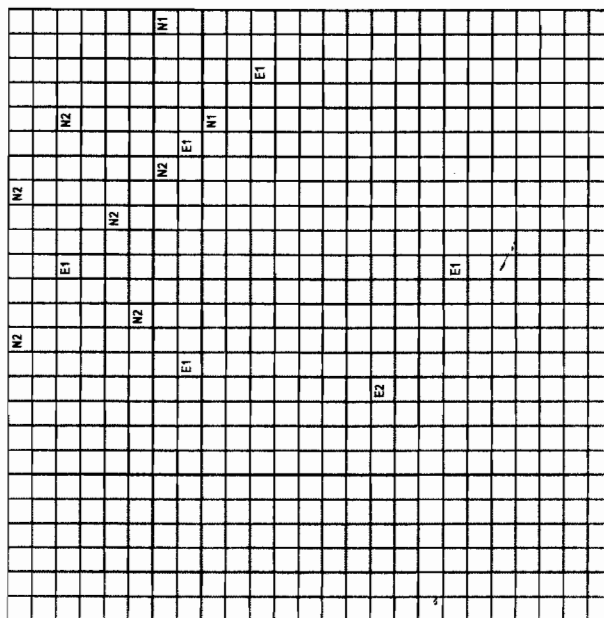
Quadrat No. 60



Planted	
N1	23
N2	7
Total	30

Existing	
E1	3
E2	1
E3	1
E4	1
E5	1
Total	7

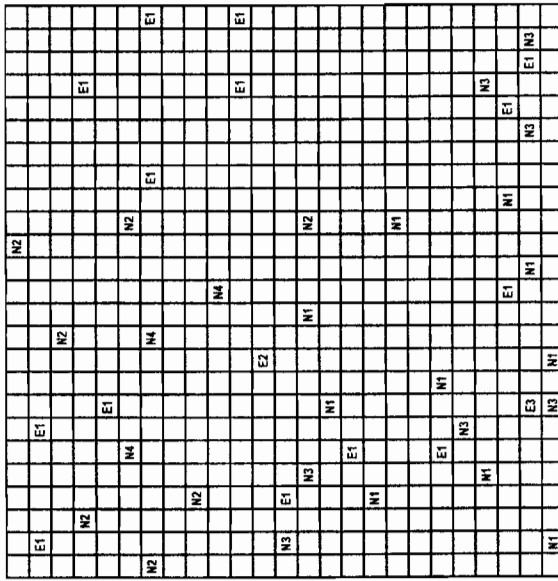
Quadrat No. 59



Planted	
N1	2
N2	6
Total	8

Existing	
E1	5
E2	1
Total	6

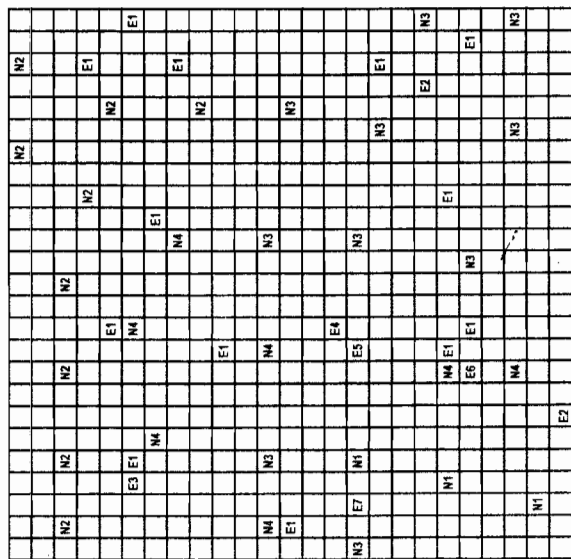
Quadrat No. 62



Existing		Planted	
E1	<i>Tectona grandis</i>	N1	<i>Psidium guajava</i>
E2	<i>Bombax ceiba</i>	N2	<i>Acacia leucophloea</i>
E3	<i>Dalbergia lanceolaria</i>	N3	<i>Calamus rotang</i>
	Total	N4	<i>Ailanthus triphysa</i>
			Total
			27

Existing		Planted	
E1	<i>Tectona grandis</i>	N1	<i>Psidium guajava</i>
E2	<i>Bombax ceiba</i>	N2	<i>Acacia leucophloea</i>
E3	<i>Dalbergia lanceolaria</i>	N3	<i>Calamus rotang</i>
	Total	N4	<i>Ailanthus triphysa</i>
			Total
			27

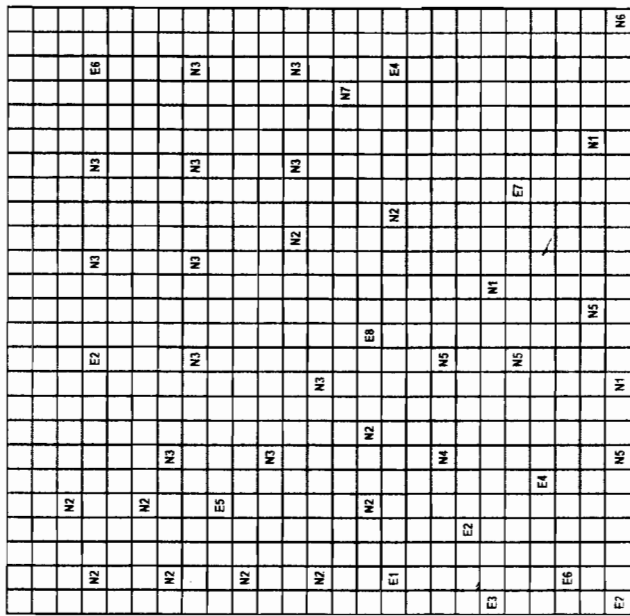
Quadrat No. 61



Existing		Planted	
E1	<i>Tectona grandis</i>	N1	<i>Acacia ferruginea</i>
E2	<i>Strychnos max-vornica</i>	N2	<i>Hydnocarpus pentandra</i>
E3	<i>Astonia scholaris</i>	N3	<i>Sterculia urens</i>
E4	<i>Holoptelea integrifolia</i>	N4	<i>Calamus rotang</i>
E5	<i>Vitex negundo</i>		Total
E6	<i>Bombax ceiba</i>		
E7	<i>Ficus dalthousiae</i>		
	Total		29

Existing		Planted	
E1	<i>Tectona grandis</i>	N1	<i>Acacia ferruginea</i>
E2	<i>Strychnos max-vornica</i>	N2	<i>Hydnocarpus pentandra</i>
E3	<i>Astonia scholaris</i>	N3	<i>Sterculia urens</i>
E4	<i>Holoptelea integrifolia</i>	N4	<i>Calamus rotang</i>
E5	<i>Vitex negundo</i>		Total
E6	<i>Bombax ceiba</i>		
E7	<i>Ficus dalthousiae</i>		
	Total		29

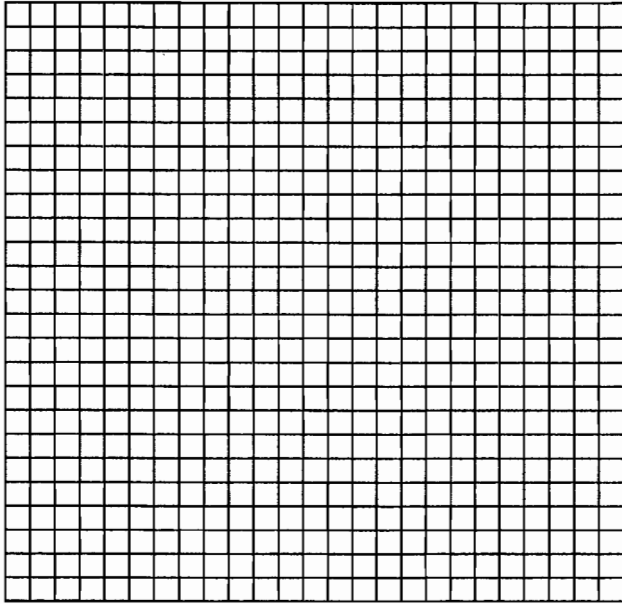
Quadrat No. 63



Existing	
E1	<i>Tecoma grandis</i>
E2	<i>Millettia tomentosa</i>
E3	<i>Cleistanthus colinus</i>
E4	<i>Terminalia crenulata</i>
E5	<i>Terminalia paniculata</i>
E6	<i>Xylocarpus</i>
E7	<i>Albizia odoratissima</i>
E8	<i>Grewia liliifolia</i>
Total	
	12

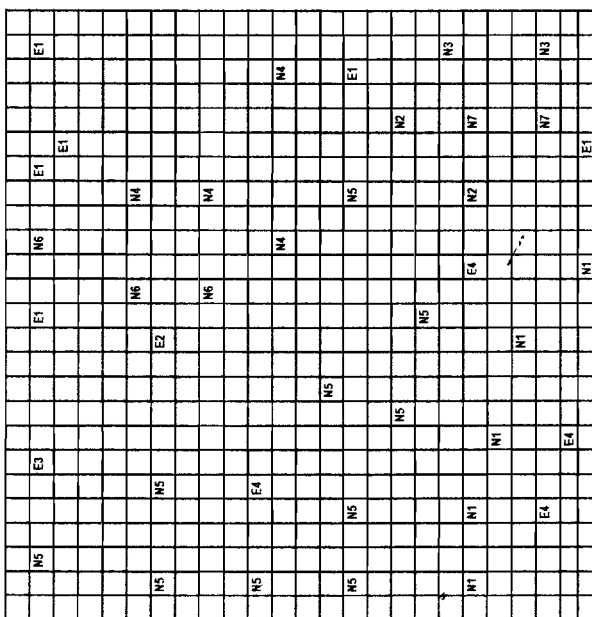
Planted	
N1	<i>Haplea racemifloea</i>
N2	<i>Terminalia arjuna</i>
N3	<i>Santalum album</i>
N4	<i>Elaeocarpus tuberculatus</i>
N5	<i>Sterculia urens</i>
N6	<i>Olea dioeca</i>
N7	<i>Terminalia chebula</i>
Total	
	31

Quadrat No. 64



Rocky area. No natural stand or planted seedlings

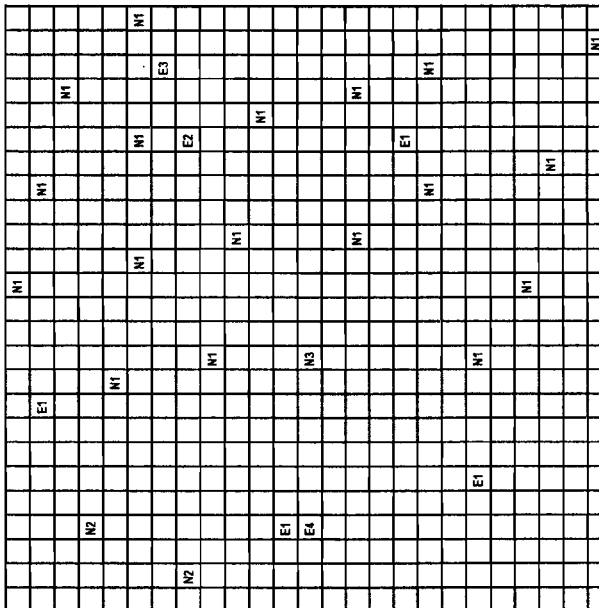
Quadrat No. 65



Existing	
E1	Tectona grandis
E2	Pterocarpus marsupium
E3	Millettia tomentosa
E4	Terminalia crenulata
Total	
	12

Planted	
N1	Aegle marmelos
N2	Ariocarpus hirsutus
N3	Acacia nilotica
N4	Emblica officinalis
N5	Samadera indica
N6	Syagium cumini
N7	Barringtonia acutangula
Total	
	28

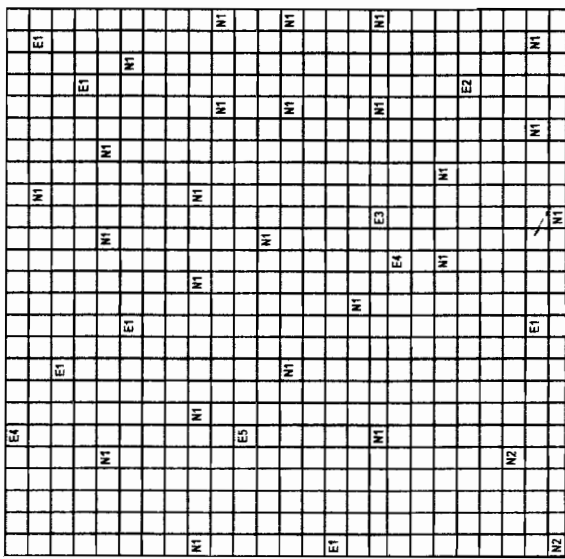
Quadrat No. 66



Existing	
E1	Tectona grandis
E2	Strychnos nuxvomica
E3	Bombax ceiba
Total	
	6

Planted	
N1	Dichrostachys cinerea
N2	Bauhinia purpurea
N3	Neolamarckia cadamba
Total	
	21

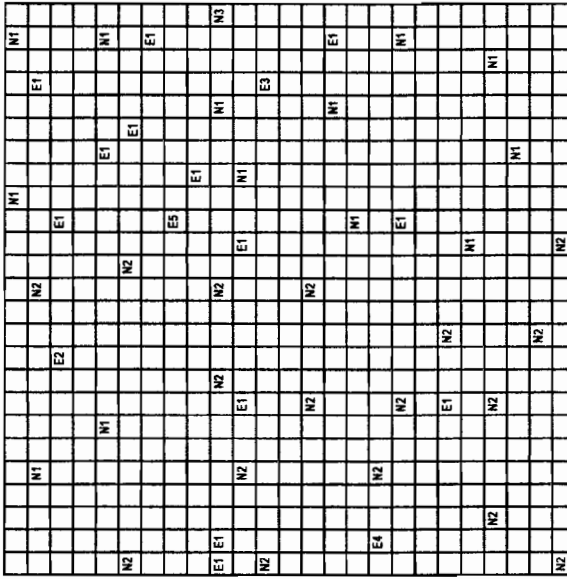
Quadrat No. 67



Planted	
N1	<i>Baccaurea courtallensis</i> 24
N2	<i>Bauhinia malabarica</i> 2
Total 26	

Existing	
E1	<i>Tectona grandis</i> 6
E2	<i>Akstonia scholaris</i> 1
E3	<i>Terminalia crenulata</i> 1
E4	<i>Dalbergia lanceolaria</i> 2
E5	<i>Trema orientalis</i> 1
Total 11	

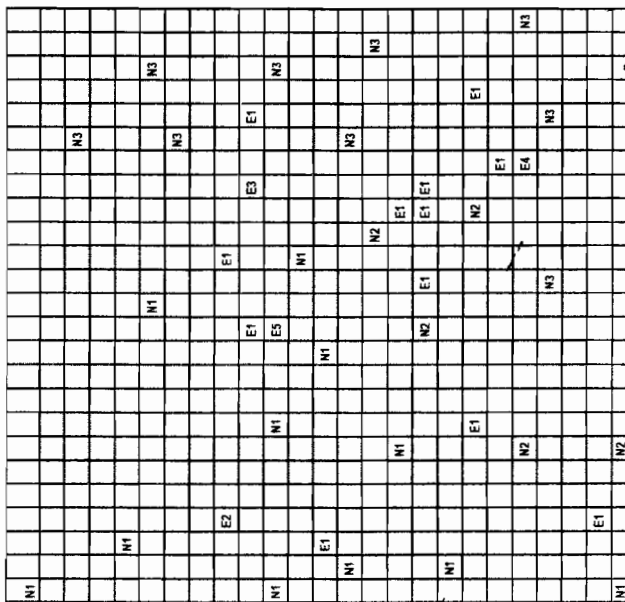
Quadrat No. 68



Existing	
E1	<i>Tectona grandis</i> 13
E2	<i>Alicia odoratissima</i> 1
E3	<i>Strychnos nux-vomica</i> 1
E4	<i>Terminalia paniculata</i> 1
E5	<i>Akstonia scholaris</i> 1
Total 17	

Planted	
N1	<i>Neolamarkia cadamba</i> 14
N2	<i>Cryptocarya wightiana</i> 17
N3	<i>Hymenocarpus penambra</i> 1
Total 32	

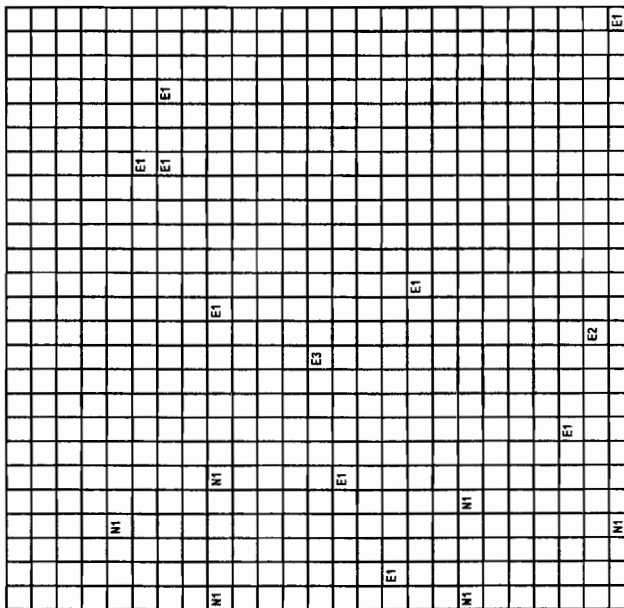
Quadrat No. 69



Existing	
F1	<i>Tectona grandis</i>
F2	<i>Albizia odoratissima</i>
F3	<i>Strychnos nux-vomica</i>
F4	<i>Bombax ceiba</i>
F5	<i>Allanthurus triphysa</i>
Total	

Planted	
N1	<i>Neolamarckia cadamba</i>
N2	<i>Acacia leucophloea</i>
N3	<i>Allanthurus triphysa</i>
Total	

Quadrat No. 70



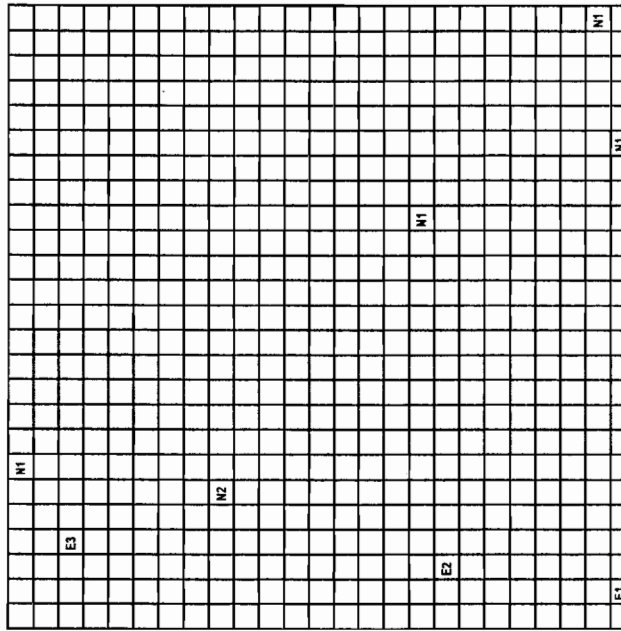
Existing	
E1	<i>Tectona grandis</i>
E2	<i>Bombax ceiba</i>
E3	<i>Dalbergia lanceolaria</i>
Total	

Planted	
N1	<i>Allanthurus triphysa</i>
Total	





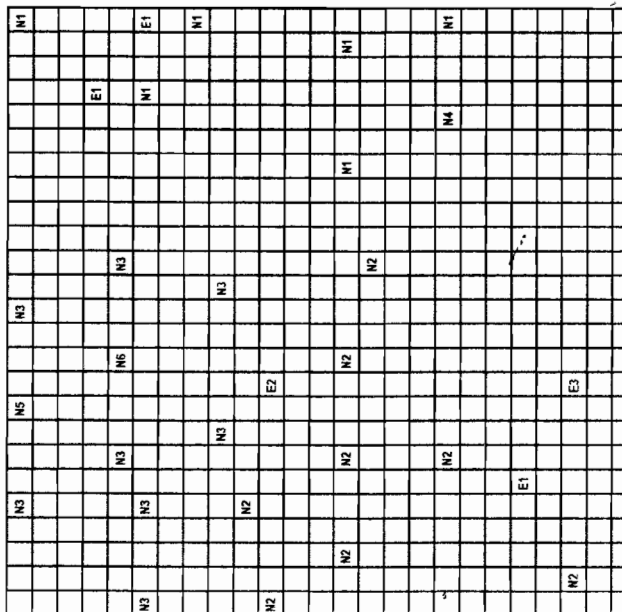
Quadrat No. 74



Existing	
E1	<i>Tectona grandis</i>
E2	<i>Bombax catha</i>
E3	<i>Terminalia crenulata</i>
Total	
	3

Planted	
N1	<i>Lagerstroemia speciosa</i>
N2	<i>Santalum album</i>
Total	
	5

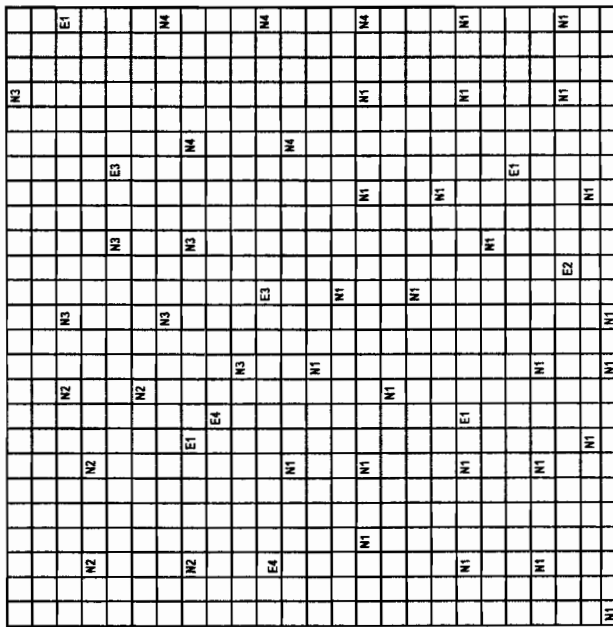
Quadrat No. 73



Existing	
E1	<i>Tectona grandis</i>
E2	<i>Cleistanthus collinus</i>
E3	<i>Vitex altissima</i>
Total	
	5

Planted	
N1	<i>Syzygium zeylanicum</i>
N2	<i>Santalum album</i>
N3	<i>Prosopis juliflora</i>
N4	<i>Bauhinia malabarica</i>
N5	<i>Diploporus indicus</i>
N6	<i>Barringtonia acutangula</i>
Total	
	25

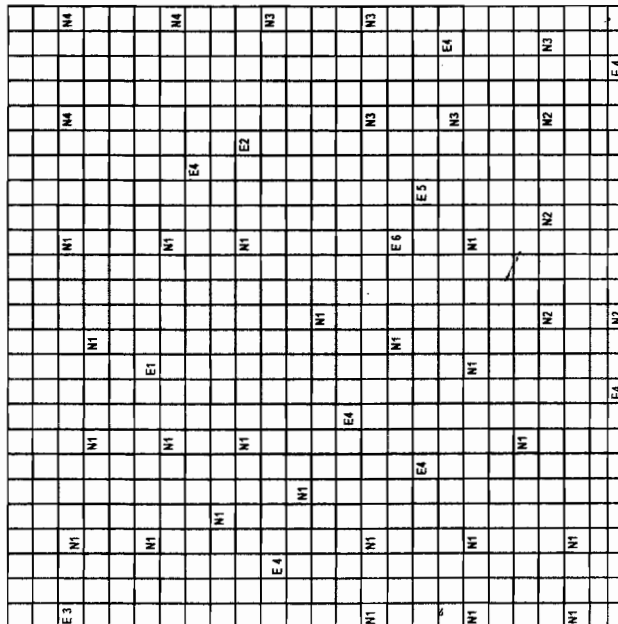
Quadrat No. 76



Planted	
N1	<i>Sapindus trifoliatus</i> 25
N2	<i>Cucurbitina sappan</i> 5
N3	<i>Akstonia scholaris</i> 6
N4	<i>Albizia amara</i> 5
	Total 41

Existing	
E1	<i>Tecoma grandis</i> 4
E2	<i>Dalbergia sissoides</i> 1
E3	<i>Terminalia crenulata</i> 2
E4	<i>Cleistanthus collinus</i> 2
	Total 9

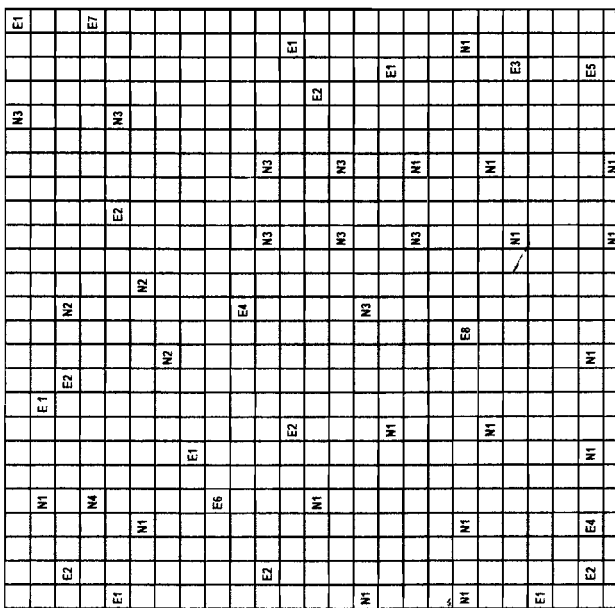
Quadrat No. 75



Planted	
N1	<i>Aphanamixis polystachya</i> 22
N2	<i>Antiaris toxicaria</i> 4
N3	<i>Terminalia bellirica</i> 5
N4	<i>Cucurbitina sappan</i> 3
	Total 34

Existing	
F1	<i>Tecoma grandis</i> 1
F2	<i>Dalbergia sissoides</i> 1
F3	<i>Xylin xylocarpa</i> 1
F4	<i>Cleistanthus collinus</i> 1
F5	<i>Caryota urens</i> 1
F6	<i>Bridelia alty-shawii</i> 1
	Total 12

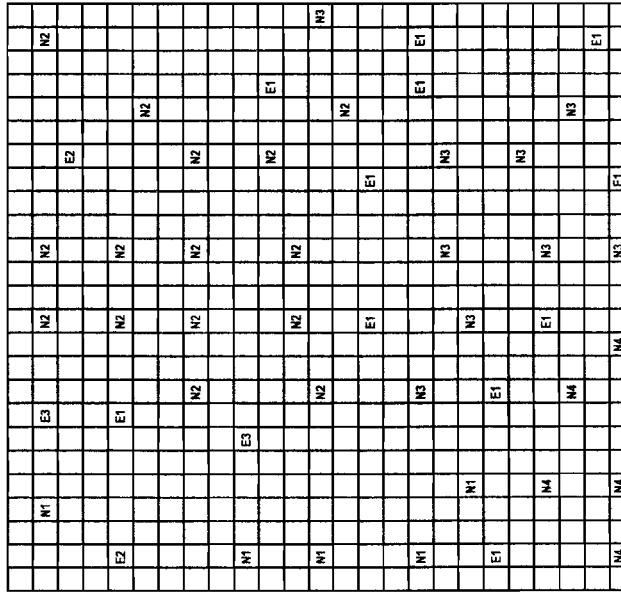
Quadrat No. 77



Existing		Planted	
E1	<i>Tectona grandis</i>	N1	<i>Cassia fistula</i>
E2	<i>Xylocarpus xylocarpus</i>	N2	<i>Pongamia pinnata</i>
E3	<i>Terminalia crenulata</i>	N3	<i>Calophyllum inophyllum</i>
E4	<i>Terminalia paniculata</i>	N4	<i>Brightwellia tinctoria</i>
E5	<i>Dalbergia lanceolaria</i>		Total
E6	<i>Millettia tomentosa</i>		28
E7	<i>Bridelia alty-shawii</i>		
E8	<i>Grewia tiliifolia</i>		
	Total		21

Existing		Planted	
E1	<i>Tectona grandis</i>	N1	<i>Cassia fistula</i>
E2	<i>Xylocarpus xylocarpus</i>	N2	<i>Pongamia pinnata</i>
E3	<i>Terminalia crenulata</i>	N3	<i>Calophyllum inophyllum</i>
E4	<i>Terminalia paniculata</i>	N4	<i>Brightwellia tinctoria</i>
E5	<i>Dalbergia lanceolaria</i>		Total
E6	<i>Millettia tomentosa</i>		28
E7	<i>Bridelia alty-shawii</i>		
E8	<i>Grewia tiliifolia</i>		
	Total		21

Quadrat No. 78



Existing		Planted	
E1	<i>Tectona grandis</i>	N1	<i>Calophyllum inophyllum</i>
E2	<i>Xylocarpus xylocarpus</i>	N2	<i>Radermachera xylocarpa</i>
E3	<i>Cleistanthus collinus</i>	N3	<i>Alistonia scholaris</i>
	Total	N4	<i>Cuesulpinia sappan</i>
			Total
			34

Existing		Planted	
E1	<i>Tectona grandis</i>	N1	<i>Calophyllum inophyllum</i>
E2	<i>Xylocarpus xylocarpus</i>	N2	<i>Radermachera xylocarpa</i>
E3	<i>Cleistanthus collinus</i>	N3	<i>Alistonia scholaris</i>
	Total	N4	<i>Cuesulpinia sappan</i>
			Total
			34



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