

## VEGETATION SURVEY OF IRON ORE MINES AT SANQUELIM (GOA)

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### ABSTRACT

The present study reports vegetation survey of naturally occurring and cultivated plant species found growing on various iron ore mine reject dumps at Sanquelim.

The list includes a variety of herbs (including grasses and legumes), climbers, shrubs and trees. In all, a total of 241 species, belonging to 186 genera, distributed among 71 families have been reported.

### INTRODUCTION

The Sanquelim iron ore mines owned by Sesa Goa Limited, is situated in the north of Goa in Bicholim taluka. A total of seven reject dumps (Viz., Sardinha, Torino, Lisboa, Napoli, Elba, Plot No. 4 and Dhat) spread over an area of 300 hectares constitutes the mine.

The present study gives the details of the vegetation survey carried out on this mine. The main objective of this work was to identify the plant species that can tolerate the inhospitable conditions of the mine sites and can grow without any artificial aid, such as fertilizers and irrigation. This will help

to identify potential plant species which can be used for revegetation programmes of the iron ore mine wastelands in the state.

The list of species surveyed (both cultivated and naturally occurring plants includes varieties of herbs (including grasses and legumes), climbers, shrubs and trees. In all, a total of 241 species, belonging to 186 genera, distributed among 71 families have been recorded. Circumscription of families have been restricted to the light of recent revisions. Bentham and Hooker's system (1862-1883) of classification which is followed in the Indian Herbaria and Floras has been adopted here.

## Vegetation of Sanquelim iron ore mines—at a glance

	Families	genera	Species	
			N.O.	Cult
I Pteridophytes	3	5	5	—
II. Angiosperms				
1. Dicotyledons	55	146	150	38
2. Monocotyledons	13	35	43	3
Total	71	186	200	41

## ENUMERATION

1	Habit	N.O./C	Occurrence on various dumps				Fl. & Fr.			
			2	3	4	5				
<b>PTERIDOPHYTES</b>										
<b>SCHIZAEACEAE</b>										
<i>Lygodium flexuosum</i> (L.) Swartz	Herb	N.O.	1	2	3	6	7	Sep.-Nov.		
<b>PTERIDACEAE</b>										
<i>Adiantum philippense</i> L.	Herb	N.O.	1	2	4	6	7	Sep.-Nov.		
<i>Cheilanthes tenuifolia</i> (Burm.) Swartz	Herb	N.O.	1	2	3	4	5	6	7	Aug.
<i>Pteris pellucida</i> Presl	Herb	N.O.	1	2	4					Nov.
<b>SELAGINELLACEAE</b>										
<i>Selaginella tenera</i> (Hook. & Grev.) Spring.	Herb	N.O.	1	2	3	4	7			Nov.
<b>ANGIOSPERMS</b>										
<b>DICOTYLEDONAE</b>										
<b>ANNONACEAE</b>										
<i>Annona squamosa</i> L.	Herb	C.	3	5	7					May-Jul.
<b>MENISPERMACEAE</b>										
<i>Tinospora cordifolia</i> (Willd.) Miers.	Climber	N.O.	3							Apr.-Dec.
<i>Cocculus hirsutus</i> (L.) Diels	Twiner	N.O.	2							Sep.-Feb.
<i>Cyclea peltata</i> (Lam.) Hook.	Shrub	N.O.	4							Jan.-May

N.O. = Naturally occurring C. = Cultivated Fl = Flowering Fr. = Fruiting.

1. Sardinha dump 2. Torino dump 3. Lisboa dump 4. Napoli dump 5. Elba dump. 6. Plot No. 4 7. Dhat dump

1	2	3	4	5
<b>POLYGALACEAE</b>				
<i>Polygala elongata</i> Klein. ex Willd.	Herb	N.O.	3 6	Aug.-Nov.
<b>CLUSIACEAE</b>				
<i>Garcinia indica</i> (Dupetit-Thouars) Choiss.	Tree	C.	3	Nov.-Aug.
<b>MALVACEAE</b>				
<i>Sida acuta</i> Burm. f.	Herb	N.O.	1 3	Sep.-Dec.
<i>Sida cordifolia</i> L.	Herb	N.O.	3 7	Oct.-Dec.
<i>Sida rhombifolia</i> L.	Herb	N.O.	2 3 4	Oct.-Dec.
<i>Urena lobata</i> L.	Shrub	N.O.	3 4 6	Oct.-Dec.
<i>Thespesia populnea</i> (L.) Soland.	Tree	C.	5	Jun.-Dec.
<b>BOMBACACEAE</b>				
<i>Bombax ceiba</i> L.	Tree	C.	4 5	Feb.-May
<b>STERCULIACEAE</b>				
<i>Helicteres isora</i> L.	Shrub	N.O.	3 5 7	Jul.-Feb.
<i>Melochia corchorifolia</i> L.	Herb	N.O.	1 7	Apr.-Nov.
<b>TILIACEAE</b>				
<i>Corchorus capsularis</i> L.	Herb	N.O.	3	Sep.-Nov.
<i>Corchorus tridens</i> L.	Herb	N.O.	4	Aug.-Oct.
<i>Grewia microcos</i> L.	Shrub	N.O.	1 3 4	May.-Oct.
<i>Triumfetta rhomboidea</i> Jacq.	Herb	N.O.	1	Sep.-Apr.
<b>OXALIDACEAE</b>				
<i>Biophytum sensitivum</i> (L.) DC.	Herb	N.O.	2	Aug.-Nov.
<b>RUTACEAE</b>				
<i>Zanthoxylum rhetsa</i> (Roxb.) DC.	Tree	N.O.	4 5	Jul.-Dec.
<b>BALSAMINACEAE</b>				
<i>Impatiens balsamina</i> L.	Herb	N.O.	3	Jul.-Nov.
<i>Impatiens kleinii</i> W. & A.	Herb	N.O.	2 3 4 6 7	Aug.-Nov.
<b>OCHNACEAE</b>				
<i>Ochna obtusata</i> DC.	Shrub	N.O.	2 3	Feb.-Jun.
<b>MELIACEAE</b>				
<i>Melia azedarach</i> L.	Tree	C.	1	Apr.-Jul.

1	2	3	4	5
RHAMNACEAE				
<i>Ziziphus glabrata</i> Heyne ex Roth	Tree	N.O.	3	Nov.-Sep.
<i>Ziziphus mauritiana</i> Lam.	Tree	N.O.	2 3 5 7	Sep.-Jan.
<i>Ziziphus oenoplia</i> (L.) Miller	Shrub	N.O.	3 6 7	Sep.-Jan.
LEEACEAE				
<i>Leea indica</i> (Burm. f.) Merr.	Shrub	N.O.	1 3 4 5 7	Jul.-Dec.
<i>Leea edgeworthii</i> Sant.	Shrub	N.O.	5	Jul.-Nov.
ANACARDIACEAE				
<i>Anacardium occidentale</i> L.	Tree	C.	1 2 3 4 6 7	Jan.-Mar.
<i>Mangifera indica</i> L.	Tree	C.	2 3 5	Jan.-May.
<i>Odina coromandelica</i> (Houtt.) Merr.	Tree	N.O.	4	Feb.-May.
FABACEAE				
<i>Alysicarpus bupleurifolius</i> (L.) DC.	Herb	N.O.	1 3 4 6 7	Oct.-Dec.
<i>Alysicarpus vaginalis</i> (L.) DC.	Herb	N.O.	1 2 3 4 5 7	Sep.-Nov.
<i>Atylosia scarabaeoides</i> Benth.	Herb	N.O.	3 4 6 7	Jun.-Oct.
<i>Crotalaria filipes</i> Benth.	Herb	N.O.	4 6	Oct.-Dec.
<i>Crotalaria pallida</i> Aiton.	Herb	N.O.	1 3 4 6 7	Nov.-Jan.
<i>Crotalaria prostrata</i> Rottler ex Willd.	Herb	N.O.	7	Oct.-Dec.
<i>Dalbergia sissoo</i> Roxb.	Tree	C.	3 6	Jan.-Apr.
<i>Dalbergia sympathetica</i> Nimmo ex Grah.	Tree	N.O.	2 4 7	Oct.-Feb.
<i>Desmodium heterocarpon</i> (L.) DC.	Shrub	N.O.	2 3 5 7	Aug.-Nov.
<i>Desmodium triflorum</i> (L.) DC.	Herb	N.O.	1 3 4 6 7	Oct.-Jan.
<i>Erythrina variegata</i> L.	Tree	C.	3	Apr.-Jun.
<i>Geissaspis cristata</i> W. & A.	Herb	N.O.	1 2 4 5 6 7	Sep.-Nov.
<i>Geissaspis tenella</i> Benth.	Herb	N.O.	1 2 3 4 6	Sep.-Nov.
<i>Gliricidia sepium</i> (Jacq.) Kunth ex Walp	Tree	C.	1 3 7	Feb.-Apr.
<i>Indigofera prostrata</i> Willd.	Herb	N.O.	1 3 4 6 7	Nov.-Jan.
<i>Pongamia pinnata</i> (L.) Pierre	Tree	C.	3 5	Apr.-Nov.
<i>Phaseolus sublobatus</i> Roxb.	Herb	N.O.	6 7	Aug.-Nov.
<i>Smithia conferta</i> Sm.	Herb	N.O.	1 3 4 6 7	Aug.-Nov.
<i>Smithia salsuginea</i> Hance	Herb	N.O.	1 2 3 4 5 6 7	Sep.-Nov.
<i>Pueraria tuberosa</i> (Roxb.) DC.	Twiner	N.O.	5	Feb.-Apr.
<i>Teramnus labialis</i> (L. f.) Spreng	Herb	N.O.	3 6	Aug.-Oct.

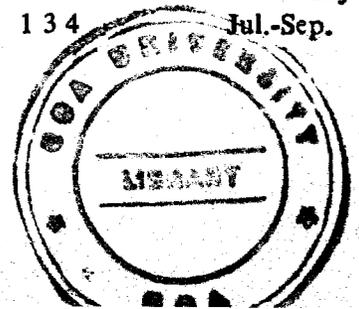
1	2	3	4	5
<i>Zornia gibbosa</i> Spanoghe	Herb	N.O.	1 3 4 6 7	Aug.-Sept.
CAESALPINIACEAE				
<i>Bauhinia purpurea</i> L.	Tree	C.	3 4 7	Sep.-Dec.
<i>Cassia absus</i> L.	Herb	N.O.	3	Aug.-Nov.
<i>Cassia alata</i> L.	Shrub	N.O.	3 4 7	Nov.-Feb.
<i>Cassia fistula</i> L.	Tree	C.	3 5 6 7	Mar.-May.
<i>Cassia siamea</i> Lam	Tree	C.	3	Jan.-Dec.
<i>Cassia tora</i> L.	Herb	N.O.	1 2 3 4 5 6 7	Aug.-Dec.
<i>Cassia mimosoides</i> L.	Herb	N.O.	4	Aug.-Dec.
<i>Delonix regia</i> (Hook.) Raf.	Tree	C.	1 2 4 6 7	Mar.-Jun.
<i>Tamarindus indica</i> L.	Tree	C.	2 7	May.-Sep.
MIMOSACEAE				
<i>Acacia nilotica</i> (L.) Del.	Tree	C.	3 6	Jun.-Jan.
<i>Acacia auriculiformis</i> A. Cunn. ex Benth.	Tree	C.	1 2 3 4 5 6 7	Dec.-Apr.
<i>Leucaena leucocephala</i> (Lam.) de Wit.	Tree	C.	2 3 4 7	Jul.-Dec.
<i>Acacia mangium</i> Willd.	Tree	C.	1 3 4 5 7	Dec.-Apr.
<i>Acacia pennata</i> (L.) Willd.	Shrub	C.	3 4 5	Jun.-Nov.
<i>Acacia torta</i> (Roxb.) Craib	Shrub	C.	4 5	Apr.-Jun.
<i>Mimosa pudica</i> L.	Herb	N.O.	1 2 3 4 5 6 7	Jul.-Dec.
<i>Wagatea spicata</i> Dalz.	Shrub	N.O.	7	Jan.-May
<i>Pithecellobium dulce</i> (Roxb.) Benth.	Tree	C.	5	Jan.-Dec.
<i>Samanea saman</i> (Jacq.) Merr.	Tree	C.	4 6	Jul.-Dec.
COMBRETACEAE				
<i>Calycopteris floribunda</i> (Roxb.) Lam.	Shrub	N.O.	3 4 5 6 7	Mar.-May
<i>Terminalia paniculata</i> Roth	Tree	N.O.	2	Sep.-Dec.
<i>Terminalia alata</i> Heyne ex Roth	Tree	N.O.	2 6	Apr.-Jun.
DROSERACEAE				
<i>Drosera indica</i> L.	Herb	N.O.	7	Aug.-Sep.
MYRTACEAE				
<i>Eucalyptus tereticornis</i> Smith	Tree	C.	1 3 4 6 7	Feb.-Jun.
<i>Eugenia corymbosa</i> Lamk.	Shrub	N.O.	1 2 3 4 5 6	Mar.-May
<i>Psidium guajava</i> L.	Tree	C.	2 3 4 5	Jun.-Sep.
<i>Syzygium cumini</i> (L.) Skeels	Tree	N.O.	1 2 3 4 6 7	Mar.-May

1	2	3	4	5
MELASTOMACEAE				
<i>Osbeckia truncata</i> Don ex W. & A.	Herb	N.O.	1 3 4 6 7	Oct.-Dec.
<i>Melastoma malabathricum</i> L.	Shrub	N.O.	1 4	Mar.-Oct.
LYTHRACEAE				
<i>Lawsonia inermis</i> L.	Shrub	C.	3 4	Apr.-Jul.
ONAGRACEAE				
<i>Ludwigia perennis</i> L.	Herb	N O.	1 2 3 5 6 7	May-Dec.
PASSIFLORACEAE				
<i>Passiflora foetida</i> L.	Climber	N.O.	1 3 4 5	Nov.-May
CUCURBITACEAE				
<i>Solena amplexicaulis</i> (Lam.) Gandhi	Climber	N.O.	3 5	Jun.-Oct.
<i>Mukia maderaspatana</i> (L.) M. Roemer	Climber	N.O.	3 4 5	Jul.-Nov.
<i>Momordica dioica</i> Roxb. ex Willd.	Twiner	N.O.	4	Jun.-Oct.
AIZOACEAE				
<i>Mullugo pentaphylla</i> L.	Herb	N.O.	4 5 7	Sep.Dec.
APIACEAE				
<i>Hydrocotyle asiatica</i> L.	Herb	N.O.	3	May-Nov.
<i>Pimpinella adscendens</i> Dalz.	Herb	N.O.	1 3 4	Nov.-Mar.
RUBIACEAE				
<i>Neanotis foetida</i> (Hook.f.) W.H. Lewis	Herb	N.O.	1 2 3 4 6	Jul.-Sep.
<i>Spermacoce hispida</i> L.	Herb	N.O.	1 2 3 4 6 7	Aug.-Nov.
<i>Spermacoce ocymoides</i> (Burm.f.) DC.	Herb	N.O.	2 3 4 6 7	Aug.-Nov.
<i>Spermacoce pnsilla</i> Wallich	Herb	N.O.	1	Aug.-Nov.
<i>Wendlandia thyrsoidea</i> (Romer & Schultes) Steudel	Tree	N.O.	1	Mar.-May
<i>Ixora coccinea</i> L.	Shrub	N.O.	4 5 7	Jan.-Dec.
<i>Mussaenda laxa</i> Hutchin.	Shrub	N.O.	5	Jul.-Nov.
<i>Randia dumetorum</i> (Retz.) Poiret	Shrub	N.O.	5	Mar.-Jun.
<i>Oldenlandia corymbosa</i> L.	Herb	N.O.	1 4 5 6 7	Nov.-May
ASTERACEAE				
<i>Ageratum conyzoides</i> L.	Herb	N.O.	1 2 3 4 5 6 7	Nov.-May
<i>Emilia sonchifolia</i> (L.) DC.	Herb	N.O.	1 5 4 3 7	Sep.-Apr.
<i>Enpatorinm odoratum</i>	Herb	N.O.	1 2 3 4 5 6 7	Mar.-May

1	2	3	4	5
<i>Parthenium hysterophorus</i> L.	Herb	N.O.	3	Nov.-Mar.
<i>Vernonia cinerea</i> (L.) Less.	Herb	N.O.	1 2 3 4 7	Aug.-Nov.
<i>Cyathocline lyrata</i> Cass.	Herb	N.O.	1	Nov.-Apr.
<i>Blumea mollis</i> (D. Don) Merr.	Herb	N.O.	4 5 6 7	Jan.-Apr.
<i>Senecio grahami</i> Hook. f.	Herb	N.O.	7	Aug.-Dec
<i>Spilanthes caiva</i> DC.	Herb	N.O.	7	Nov.-Jan.
CAMPANULACEAE				
<i>Lobelia alsinoides</i> L.	Herb	N.O.	4	Aug.-Oct.
MYRSINACEAE				
<i>Maesa indica</i> (Roxb.) A. DC.	Shrub	N.O.	4	Nov.-Jan.
SAPOTACEAE				
<i>Manilkara zapota</i> (L.) P. Royen	Tree	C.	3	Feb.-May
OLEACEAE				
<i>Nyctanthes arbor-tristis</i> L.	Tree	N.O.	3	Jan.-Dec.
APOCYNACEAE				
<i>Alstonia scholaris</i> (L.) R. Br.	Tree	C.	1 2 3 4 5 6 7	Jun.-Apr.
<i>Ervatamia heyneana</i> Cooke	Tree	N.O.	3	Mar.-Aug.
<i>Ichnocarpus frutescens</i> (L.) R. Br.	Shrub	N.O.	1 3 4 5 6 7	Nov.-Jan.
<i>Rauwolfia serpentina</i> (L.) Benth. ex Kurz	Shrub	N.O.	3	Apr.-Nov.
<i>Carissa congesta</i> Wt.	Shrub	N.O.	7	Dec.-Jan.
ASCLEPIADACEAE				
<i>Calotropis gigantea</i> (L.) R. Br.	Shrub	N.O.	1 2 3 4 6 7	Dec.-May
<i>Cosmostigma racemosum</i> (Roxb.) Wight	Shrub	N.O.	2 3 5	Jun.-Aug.
<i>Tylophora dalzellii</i> Hook. f.	Twiner	N.O.	4	Sep.-Mar.
<i>Tylophora fasciculata</i> Ham.	Herb	N.O.	3	Jun.-Dec
<i>Hemidesmus indicus</i> (L.) Schult	Twiner	N.O.	4 7	Nov.-Feb.
<i>Cryptolepis buchanani</i> Roemer & Schultes	Shrub	N.O.	4 5 6	Mar.-Dec.
<i>Gymoema sylvestre</i> (Retz.) R. Br. ex Roemer & Schultes	Climber	N.O.	1 5	Apr.-Oct.
<i>Marsdenia volubilis</i> Cooke	Twiner	N.O.	2	Apr.-May

1	2	3	4	5
LOGANIACEAE				
<i>Strychnos nux-vomica</i> L.	Tree	N.O.	3	Mar.-Dec.
GENTIANACEAE				
<i>Canscora diffusa</i> (Vahl) R. Br.	Herb	N.O.	1 2 3 4 5 6 7	Mar.-Nov.
<i>Canscora perfoliata</i> Lamk.	Herb	N.O.	3 7	Feb.-Mar.
<i>Exacum lawii</i> C.B. Clarke	Herb	N.O.	2 6 7	Oct.-Nov.
CONVOLVULACEAE				
<i>Evolvulus alsinoides</i> (L.) L.	Herb	N.O.	3	Jul.-Nov.
<i>Ipomoea obscura</i> (L.) Ker Gawler	Herb	N.O.	1 2 3 4 6	Aug.-Oct.
<i>Merremia tridentata</i> (L.) Hallier f.	Herb	N.O.	3 6 7	Aug.-Oct.
<i>Lettsonia aggregata</i> Roxb.	Twiner	N.O.	1	Jan.-Mar.
SOLANACEAE				
<i>Physalis minima</i> L.	Herb	N.O.	2 3 4	Aug.-Nov.
SCROPHULARIACEAE				
<i>Dopatrium junceum</i> (Roxb.) Buch.-Ham. ex Benth.	Herb	N.O.	3	Aug.-Sep.
<i>Lindernia crustacea</i> (L.) F. Muell.	Herb	N.O.	1 2 3 4 5 6 7	Aug.-Jan.
<i>Ramphicarpa longiflora</i> Benth.	Herb	N.O.	2 3 4 6	Aug.-Sep.
<i>Lindernia viscosa</i> (Hornem.) Boldingh	Herb	N.O.	5	Sep.-Oct.
<i>Scoparia dulcis</i> L.	Herb	N.O.	1 2 3 4 5 6 7	Aug.-May
<i>Sopubia delphinifolia</i> L. Don.	Herb	N.O.	6	Aug.-Nov.
<i>Striga asiatica</i> (L.) Kuntze	Herb	N.O.	1 2 3 4 6 7	Aug.-Nov.
<i>Centranthera bispida</i> R. Br.	Herb	N.O.	2 4 6 7	Aug.-Oct.
<i>Lindernia oppositifolia</i> (Retz.) Mukherjee	Herb	N.O.	1 7	Aug.-Nov.
BIGNONIACEAE				
<i>Jacaranda mimosifolia</i> D. Don	Tree	C.	2 3 4 6 7	Mar.-Dec.
<i>Tecoma stans</i> (L.) Kunth	Shrub	C.	3	Jan.-Dec.
PEDALIACEAE				
<i>Sesamum lacinatedum</i> Klein ex Willd.	Herb	N.O.	1	Sep.-Dec.
<i>Sesamum mulayanum</i> Nair	Herb	N.O.	1	Aug.-Oct.
ACANTHACEAE				
<i>Justicia procumbens</i> L.	Herb	N.O.	1 3 4 5	Oct.-Jan.

1	2	3	4	5
<i>Lepidagathis lutea</i> Dalz.	Herb	N.O.	3	Nov.-Jan.
VERBENACEAE				
<i>Clerodendrum inermi</i> (L.) Gaertner	Shrub	N.O.	3	Sep.-Jan.
<i>Clerodendrum serratum</i> (L.) Moon	Shrub	N.O.	3	Aug.-Nov.
<i>Clerodendrum viscosum</i> Vent.	Shrub	N.O.	4 6 7	Oct.-Jan.
<i>Vitex nigundo</i> L.	Shrub	N.O.	3	Jan.-Dec.
<i>Vitex altissima</i> L. f.	Tree	N.O.	1 5	May-Aug.
<i>Tectona grandis</i> L. f.	Tree	C.	6	Jun.-Sep.
LAMIACEAE				
<i>Leucas aspera</i> (Willd.) Link	Herb	N.O.	1 3 7	Sep.-Nov.
<i>Ocimum tenuiflorum</i> L.	Herb	N.O.	3	Apr.-May
<i>Colebrookea oppositifolia</i> Smith	Shrub	N.O.	4	Dec.-Apr.
<i>Hyptis suaveolens</i> (L.) Poit	Herb	N.O.	1	Aug.-Dec.
NYCTAGINACEAE				
<i>Bougainvillea spectabilis</i> Willd.	Shrub	N.O.	5	Aug.-Dec.
AMARANTHACEAE				
<i>Amaranthus viridis</i> L.	Herb	N.O.	3	Sep.-Nov.
<i>Celosia argentea</i> L.	Herb	N.O.	3	Aug.-Dec.
<i>Gomphrena celosioides</i> Mart.	Herb	N.O.	3	Jan.-Dec.
<i>Alternanthera triandra</i> Lam.	Herb	N.O.	7	Aug.-Apr.
POLYGONACEAE				
<i>Polygonum plebeium</i> R. Br.	Herb	N.O.	1	Aug.-Nov.
PIPERACEAE				
<i>Peperomia pellucida</i> (L.) H. B. & K.	Herb	N.O.	1 4 7	Aug.-Nov.
EUPHORBIACEAE				
<i>Bridelia scandens</i> (Roxb.) Willd.	Shrub	N.O.	3 4 7	Oct.-Dec.
<i>Euphorbia hirta</i> L.	Herb	N.O.	3 4 7	Jan.-Dec.
<i>Euphorbia notoptera</i> Boiss.	Herb	N.O.	3 4	Aug.-Dec.
<i>Euphorbia thymifolia</i> L.	Herb	N.O.	3	Dec.-Mar.
<i>Jatropha curcas</i> L.	Shrub	C.	1 3 5 6 7	Apr.-Nov.
<i>Phyllanthus emblica</i> L.	Tree	C.	3	Mar.-May
<i>Phyllanthus maderaspatensis</i> L.	Herb	N.O.	1 3 4	Jul.-Sep.



Rodrigues

1	2	3	4	5
<b>Phyllanthus amarus</b> Schum. & Thonn.	Herb	N.O.	1 3 6 7	Jul.-Sep.
<b>Phyllanthus simplex</b> Retz.	Herb	N.O.	3	Aug.-Nov.
<b>Sapium insigne</b> (Royle) Trimen	Tree	C.	3 5 6 7	Jan.-Apr.
<b>Securinega virosa</b> (Roxb. ex Willd.) Pax & Hoffm.	Shrub	N.O.	1	May-Jun.
<b>Macaranga peltata</b> (Roxb.) Muell. Arg.	Tree	N.O.	4 5	Jun.-May
ULMACEAE				
<b>Trema orientalis</b> (L.) Blume	Tree	N.O.	2 3 4 5 6 7	Jan.-Dec.
MORACEAE				
<b>Artocarpus heterophyllus</b> Lam.	Tree	C.	3 4	Jan.-Sep.
<b>Ficus racemosa</b> L.	Tree	N.O.	1 3 4 6 7	Mar.-Sep.
<b>Ficus hispida</b> L. f.	Tree	N.O.	1 3 4 5	Apr.-Jul.
<b>Ficus religiosa</b> L.	Tree	N.O.	1 3	May-Jul.
<b>Ficus heterophylla</b> L. f.	Tree	N.O.	1 4 6	Apr-Jun.
<b>Ficus benghalensis</b> L.	Tree	N.O.	4	Jun.-Apr.
CASUARINACEAE				
<b>Casuarina equisetifolia</b> Forster & Forster f.	Tree	C.	1 2 3 4 5 7	Sep.-Jun.
MONOCOTYLEDONAE				
ORCHIDACEAE				
<b>Habenaria marginata</b> Coleb.	Herb	N.O.	1 2 4 6 7	Sep.-Oct.
<b>Liparis nervosa</b> Lindl.	Herb	N.O.	1	Jul.-Sep..
ZINGIBERACEAE				
<b>Curcuma decipiens</b> Dalz.	Herb	N.O.	5 7	Jun.-Sep.
BURMANNIACEAE				
<b>Burmanna coelestis</b> D. Don	Herb	N.O.	1 3	Aug.-Oct.
MUSACEAE				
<b>Musa paradisiaca</b> L.	Tree	C.	3	Jan.-Dec
BROMELIACEAE				
<b>Ananus comosus</b> (L.) Meer.	Herb	C.	3 6	Jan.-Mar
DIOSCOREACEAE				
<b>Dioscorea bulbifera</b> L.	Twiner	N.O.	1 3 4 7	Aug.-Nov
<b>Dioscorea pentaphylla</b> L.	Twiner	N.O.	3 4 5	Sep.-Nov.

1	2	2	4	5
<b>LILIACEAE</b>				
<i>Gloriosa superba</i> L.	Climber	N.O.	3	Aug.-Oct.
<b>COMMELINACEAE</b>				
<i>Murdannia semiteres</i> (Dalz.) Santapau	Herb	N.O.	3 4 6 7	Aug.-Sep.
<i>Commelina forskalaei</i> Vahl	Herb	N.O.	3 4	Sep.-Nov.
<i>Cyanotis cristata</i> (L.) D. Don	Herb	N.O.	1 3 4 6 7	Aug.-Nov.
<b>ARECACEAE</b>				
<i>Caryota urens</i> L.	Tree	N.O.	4 5	Jan.-Dec.
<b>ERIOCAULACEAE</b>				
<i>Eriocaulon cinereum</i> R. Br.	Herb	N.O.	1 3 4 6 7	Sep.-Nov.
<i>Eriocaulon xeranthemum</i> Mart.	Herb	N.O.	1 3 4 6 7	Aug.-Sep.
<b>ARACEAE</b>				
<i>Amorphophallus commutatus</i> Engler	Herb	N.O.	4 5 6	May.-Jun.
<b>CYPERACEAE</b>				
<i>Cyperus compressus</i> L.	Herb	N.O.	1 5 6	Aug.-Nov.
<i>Cyperus iria</i> L.	Herb	N.O.	1 2 3 4 5 6	Aug.-Dec.
<i>Cyperus odoratus</i> L.	Herb	N.O.	2 4 5 7	Aug.-Oct.
<i>Cyperus pulcherrimus</i> Will.	Herb	N.O.	3 5 6	Sep.-Nov.
<i>Cyperus pumilus</i> L.	Herb	N.O.	1 3 6	Sep.-Nov.
<i>Cyperus rotundus</i> L.	Herb	N.O.	4	Mar.-Aug.
<i>Fimbristylis ferruginea</i> (L.) Vahl	Herb	N.O.	1 3 5 6 7	Sep.-Nov.
<i>Fimbristylis diphylla</i> Vahl	Herb	N.O.	1 7	Aug.-Nov.
<i>Fimbristylis dichotoma</i> Vahl	Herb	N.O.	2 4 7	Gct.-Apr.
<i>Fimbristylis miliacea</i> (L.) Vahl	Herb	N.O.	2	Mar.-Nov.
<i>Rhynchospora wightiana</i> Steud.	Herb	N.O.	3 6	Aug.-Nov.
<i>Kyllinga brevifolia</i> Rottb.	Herb	N.O.	5	Sep.-Nov.
<b>POACEAE</b>				
<i>Aristida bystrix</i> L. f.	Herb	N.O.	1	Oct.-Nov.
<i>Arundinella ciliata</i> (Roxb.) Nees ex Miq.	Herb	N.O.	1	Sep.-Nov.
<i>Arundinella spicata</i> Dalz.	Herb	N.O.	4	Nov.-Dec.
<i>Ischaemum semisagittatum</i> Roxb.	Herb	N.O.	1 4 7	Oct.-Nov.
<i>Digitaria ciliaris</i> (Retz.) Koeler	Herb	N.O.	1 2 3 5 6	Aug.-Nov.

1	2	3	4	5
<i>Echinochloa colona</i> (L.) Link	Herb	N.O.	2 3 5 6	Aug.-Nov.
<i>Eragrostis unioides</i> (Retz.) Nees ex Steud.	Herb	N.O.	1 2 3 4 5 6 7	Sep.-Nov.
<i>Eragrostis viscosa</i> (Retz.) Trin.	Herb	N.O.	5	Sep.-Nov.
<i>Heteropogon contortus</i> (L.) P. Beauv. ex Roemer & Schultes	Herb	N.O.	3 4 5	Sep.-Nov.
<i>Isachne elegans</i> Dalz. ex Hook.	Herb	N.O.	3 5 7	Sep.-Nov.
<i>Ischaemum rugosum</i> Salisb.	Herb	N.O.	5	Oct.-Nov.
<i>Manisuris acuminata</i> (Hack.) O. Kuntze	Herb	N.O.	3 4	Sep.-Nov.
<i>Panicum notatum</i> Retz.	Herb	N.O.	2	Sep.-Nov.
<i>Oplismenus birmannii</i> (Retz.) P. Beauv.	Herb	N.O.	1 2 3 4 5 6	Sep.-Nov.
<i>Dimeria woodrowii</i> Stapf	Herb	N.O.	4	Oct.-Nov.
<i>Paspalidium flavidum</i> (Retz.) A Camus	Herb	N.O.	3	Sep.-Nov.
<i>Paspalum scrobiculatum</i> L.	Herb	N.O.	1 3 4 7	Jun.-Oct.
<i>Setaria pallide-fusca</i> (Schumach.) Stapf & Hubb.	Herb	N.O.	1 3 6	Aug.-Nov.
<i>Vetiveria zizanioides</i> (L.) Nash	Herb	C.	3 5	Sep.-Nov.
<i>Cynodon dactylon</i> (L.) Pers.	Herb	N.O.	1 4	Apr.-May

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