

Sustainable Landscaping with Under-exploited Native Ornamentals

The native plants for landscaping should be built thorough the basic data regarding their habitat, habit and morphological characteristics that contribute to the beauty of the plant, flowering season, attraction to pollinators, plant propagation aspects, tolerance to adverse climatic conditions like drought, flood, etc. As such the suitability of the native plants may vary based on its growing agroclimatic conditions like warm humid tropics, subtropics, cold dry temperate and also desert-like situations. Hence, situation wise choice of plants assumes very importance for the sustainability of the landscape.

USE of native plants for landscaping is a sustainable mode of landscaping. However, simply being native does not make one plant a candidate for landscaping purposes. Such plants should have attractive habits, and beautiful leaves/ flowers/fruits. Plants with edible parts like leaves/flowers/fruits add to the sustainability of landscaping by augmenting nutritional resources. Majority of the native plants are also renowned home remedies for various ailments thereby assisting in a holistic treatment for many health issues. Acceptance by pollinators is again an advantage of the natives intended for landscaping purposes. Majority of the native flora act as either sources of nectar, pollen or fruits and thus provide food for fauna, especially bees, butterflies and birds. Some native species have difficulty in home landscapes because the environment is very different from their natural growing conditions. Also, even with natives, it is important to find the right plant for each specific location in the landscape to be created.

Conservation of native plants is also essential for the conservation of plant-specific wildlife like bees, butterflies and many birds. Many of the native flora also have suitable root systems that reduce soil erosion and hence this aspect of environmental protection is also taken care of with native plant landscaping.

When considering the locations for native plant landscaping, we can think of public parks, botanical gardens, highway medians, road sides, airports, golf courses, public institutions and home gardens.

ICAR-AICRP on Floriculture KAU Centre and the Department of Floriculture and Landscaping, College of Agriculture Vellanikkara has evaluated many native plants and the study has come out with many indigenous, endemic plants useful for sustainable landscaping. Discussed here are some of the plants and their landscape utility. Based on the growth habit, plants have been grouped for various landscaping purposes like ground

covers, hedges and borders, specimen plants, bedding/ potted plants, etc.

Ground covers

A ground cover should be planted having good spread, attractive foliage and amenable to thorough pruning/ mowing periodically. Colourful flowers are an added attraction for the ground covers.

Asystasia gangetica L.

The plant is a member of Acanthaceae family. Commonly known as creeping Foxglove or Ganges primrose, the plant is a perennial herb rooting at nodes. The flowers are produced in lax racemes in different colours brilliant yellow-green, greenish-white and purple. Average inflorescence length is 7.50 cm with an average of 8 flowers per inflorescence. The plant grows and flowers profusely in open or under partial shade. Flowering is seen almost throughout the year. The plant also attracts bees and butterflies and this pollinator activity is seen maximum during August to March. The flowers are considerably large with an average size of 4.50 × 3.25 cm. The white-flowered types are especially recommended for moon gardens.



Naregamia alata Wight & Arn.

Commonly known as Goanese ipecac, the plant is a member of the Meliaceae family and endemic to peninsular India. The plant is a prostrate, woody herb usually seen as an under shrub, with dark green shining

trifoliate leaves. Flowers are solitary and axillary, white with a yellow-tipped staminal tube. The size of the flowers ranges from 3.0-4.0 cm in diameter. Flowering and fruiting season is from August to December. In the habitat, the plant dries out during the summer season and seeds germinate during the next monsoon. But, when given irrigation, it retains good growth. The plant can be used as a ground cover in partial shade. The plant is also suitable for moon gardens.

***Eranthemum capense* var. *concanense* (Clarke) Sant**

The plant is endemic to peninsular India and commonly known as Konkan Eranthemum belonging to Acanthaceae family. The plant reaches a height of 50-55 cm at first flower bud initiation. Naturally seen as an under shrub, the plant is a good cover for thick shaded areas. Flowering is seen from October to February. Inflorescence is a dense panicle of spikes with an average length of 21 cm with 6-8 flowers per spike. Individual flowers are of size 2.54×2.38 cm. Flowers are brilliant blue. The plant is propagated through cuttings.



Hedges and Borders

Hedges and borders bring structure, definition, and aesthetic appeal to the garden, thereby playing a crucial role in gardening. Dense and closely planted shrubs are used for the purpose and serve to provide privacy, noise reduction, and windbreaks, and also define different areas within a garden.

Ecbolium viride

Commonly known as the Blue fox tail, the plant is a member of the family Acanthaceae. The plant is a shrub, that reaches a height of 80-90 cm at first flowering. Inflorescence is a dense spike of length 10-12 cm with an average of 8-10 flowers per spike. Flowers are of size 2.03×3.15 cm and with pale green colour. Flowering duration is from January to May. The plant is suitable as a hedge in partial shade or full shade. The plant is propagated through cuttings.



***Rauvolfia tetraphylla* L.**

The plant is a shrub belonging to the family Apocynaceae that reaches a height of 40-50 cm at first flowering. The plant grows to a height of 3 m

if not pruned. Minute creamy-whitish flowers are born in umbellate cymes. Flowers are inconspicuous. However, fruits are very showy, globose 8-10 mm across, and turn deep red when ripe. The plant is suitable for hedging in open situations. The plant is propagated by seeds and cuttings.



***Melastoma malabathricum* L.**

A shrubby, evergreen plant belonging to the family Melastomataceae. The plant is commonly called Indian rhododendron which reaches a height of 1-1.5 m. Purple violet flowers are solitary, with a size of 4.50-5.0 cm. The plant is free flowering and suitable as flower borders in gardens. Grows well in the open. The plant is seed propagated.

***Barleria strigosa* Willd**

Commonly known as Bristly Blue Barleria. The plant is a member of the Acanthaceae family. Flowers with light violet colour are borne in dense spikes in leaf axils, average inflorescence length is 13 cm with an average of 11 flowers per spike. Flowers are of size 8.30×2.95 cm. Though sparse flowering is seen throughout, profuse flowering is seen from September to January. The plant is suitable as a hedge or border in dense shade. The plant is propagated through cuttings.



***Pogostemon quadrifolius* (Benth.) F. Muell**

The plant is a sub-shrub belonging to family Lamiaceae which is distributed in the lateritic hillocks of Peninsular India. It grows to a height of 60-90 cm, the inflorescence is a spike of length 11.00-15.00 cm with minute florets studded on the spike. The florets are purple. The plant is suitable as a flowering border in the open. The plant survives if sufficient irrigation is given during summer. It attracts a lot of bees, butterflies and wasps during flowering. The plant can be maintained by mild pruning after flowering. The plant is seed propagated.



***Leucas* spp.**

This is an annual herb of the family Lamiaceae that grows to a height of 30-45 cm at flowering. The plant produces small white flowers and attracts a variety of bees. This is suitable as a border plant, especially in a moon garden. The plant is seed propagated and care should be taken to avoid excess seeding in the location.

***Ocimum americanum* L.**

This is an aromatic annual herb of the Lamiaceae family. The plant grows to a height of 30-40 cm. It attracts a wide variety of bees during flowering. The plant is suitable as a bedding/ border plant, especially for therapeutic gardens.

Specimen shrubs

Specimen shrubs add focal points, and beauty to outdoor spaces. These shrubs are selected based on their characteristics such as distinctive bark, vibrant blooms, or unusual forms. Specimen shrubs are placed either as standalone plants or in a group to draw visual attention and bring a sense of individuality or personality to any garden.

***Memecylon malabaricum* Cogn**

Commonly known as Malabar Memecylon. This is an endemic plant to the Southern Western Ghats and belongs to the family Melastomataceae. The plant is naturally an under shrub and somewhat straggling under shade, but when grown in the open, it grows to a compact, erect shrub. Inflorescence is axillary and consists of minute flowers fascicled in many flowered dense cymes with flowers of strong violet colour. The plant flowers from February to May. Fruit is a berry, globose, 4-5 mm across. Fruits are green that turn reddish when ripe. The plant is suitable as a specimen shrub for open and partially shaded conditions; and suitable for container gardening. This is a seed-propagated plant.



***Memecylon edule* Roxb**

Commonly known as Ironwood tree, the plant is a member of the Melastomataceae family. This is a large shrub or small tree growing to a height of 4-5 m. This is an evergreen plant which is very attractive with smooth, glossy leaves. The plant flowers during February-March and the entire branches are laden with blue flowers. The flowers last for only 4-5 days after blooming. A lot of bees visit the plant during flowering. Fruits are yellowish initially which turn bluish-black on ripening. Fruits are relished by birds. The plant is suitable as a specimen shrub for open areas. The plant is seed propagated.

***Syzgium caryophyllatum* (L.) Alston**

Commonly known as South Indian Plum. This is an

endangered plant belonging to the family Myrtaceae, distributed in the Western Ghats and Sri Lanka. The plant is a large shrub or small tree that grows to 3-6 m, leaves are thick, leathery, glabrous, and obovate with blunt tips. Flowering season from March-April; small creamy-whitish flowers born in corymb-like cymes at the tip of branches. Small (1cm across) globose berries turn purplish black when ripe. Fruits mature during June-July. Flowers attract bees and butterflies.

The plant can be utilized as an attractive specimen shrub in gardens, and also for butterfly gardens. The plant is propagated by seeds.

***Pavetta indica* var. *indica* L.**

Commonly known as Indian Pavetta, this is a plant belonging to the Rubiaceae family. This is distributed in India and Sri Lanka. The plant is a large shrub or small tree growing up to 2-4 m; naturally seen as an under shrub. Leaves are glabrescent, inflorescence in terminal corymbs, 50-200 per cyme. Flowers are white coloured and very fragrant and attract butterflies and bees. Flowering is seen from April-May. Fruits which are globose berries, nearly 1 cm across turn black when mature. The plant is suitable for partial shade as a specimen shrub, for moon gardens and also for butterfly gardens. The plant is propagated by seeds and cuttings.

***Capparis baducca* L.**

Commonly known as Rheed's caper. The plant is a member of the Capparaceae family. It is a spiny shrub growing to 2-4 m height. The plant is endemic to the Western Ghats. Flowering season starts in February-March. Flowers are nearly 8 cm across and pale blue which on fading changes to white with yellow blotches at the base of the upper pair of petals. Stingless bees are attracted towards the flowers. The plant is suitable as a specimen shrub under partial shade. The plant is propagated by cuttings.



***Tabernaemontana alternifolia* L.**

Commonly known as 'Nag Kuda'. The plant belongs to the family Apocynaceae. It is a small tree or large shrub growing to a height of 2-5 m. The plant is endemic to Southern Western Ghats. White flowers, not very conspicuous are born in corymb-like cymes during March-April and plants are very attractive for their orange, boat-shaped fruits. The plant is suitable as a specimen shrub in open/partial shade.

Bedding, potted plants and container gardening

Bedding, potted, and container plants are commonly used to add vibrant colour and life to balconies, outdoor spaces, and patios. Typically, annuals or tender perennials are used as bedding plants and are planted in mass

displays. Potted plants offer flexibility and mobility to the gardeners for experimenting with different arrangements and combinations. Container gardening is suitable for gardens with limited space and useful for creating beautiful arrangements even without a traditional garden plot.

***Ixora malabarica* (Dennst.) Mabb.**

Commonly known as Malabar Ixora, this is a member of the Rubiaceae family. The plant is endemic to Southern Western Ghats. It is a slender, erect shrub which grows to a height of 0.6-0.8 m. Leaves are thin and leathery. Flowers are born in corymb-like, lax, few-flowered cymes that are drooping. Flowers are of greenish-yellow colour nearly 1 cm across, petals curled and recurved. Flowering is seen in October and fruiting in March. Fruits are berries, 1cm across, subglobose. This is a vulnerable plant and conservation is of utmost importance. The plant is suitable as a bedding plant under intense shade or partial shade. Also suitable for container gardening in the shade. The plant is propagated through seeds and root suckers.



***Pseuderanthemum malabaricum* (C.B. Clarke) Gamble**

Malabar False Eranthemum is the common name of this plant, belonging to the Acanthaceae family. The plant is distributed in peninsular India and Sri Lanka. It is a sub-shrub growing to 0.4-0.75 m height. Flowers are born in spikes of 20-25 cm length. Flowers are of size 3.2×1.6 cm. Flowers are white having purple dots. Flowering season starts from November to January. The plant is suitable for bedding under intense shade or partial shade; also suitable for container gardening in shade. The plant is propagated by cuttings.



***Tephrosia tinctoria* Pers**

Commonly known as Orange Tephrosia, the plant is a member of the family Fabaceae and is distributed in Peninsular India and Sri Lanka. Erect sub-shrub, naturally seen under partial shade. Leaves are pinnate with 3-5 leaflets. Leaves are glabrous and densely white tomentose beneath. Inflorescence is axillary raceme. Flowers are of size 1.5×1.0 cm and orange colour. Flowering starts in September. This plant is suitable for bedding in partial shade. The plant is seed propagated.

***Exacum bicolor* Roxb**

Commonly known as Country Kreat, this is a member

of the family Gentianaceae. It is distributed in Peninsular India. The plant is a herbaceous perennial, each year sprouting from the tuberous roots during S-W monsoon. The plant grows to a height of 0.4-0.6 m. The stem is sturdy, thick and quadrangular. Leaves are dark green, thick and leathery. The inflorescence is a dichasial cyme, with 50-250 flowers. In the habitat, flowering starts during August and fruiting in December. The plant is suitable for beds/ as a potted plant in the open during the rainy season. Pollinators like stingless bees and carpenter bees are attracted towards the flowers. The plant is seed propagated.



***Begonia dipetala* Graham**

Commonly known as two-petal begonia, this is a member of the Begoniaceae family. Stem is thick and reddish. Leaves are green, obliquely ovate, semi-heart-shaped, pointed at the tip, and have a red sinus. Leaves are with many trichomes. Flowers are pink. Both male and female flowers consist of two tepals. The plant is suitable as a potted plant indoors as well as in shade. The plant is propagated through leaf/shoot cuttings.



SUMMARY

The plant genetic wealth of the hotspots of biodiversity particularly the Western Ghats, remains under-exploited for landscaping activities. There are innumerable plants with ornamental potential which are suitable for various landscaping aspects. People are unaware of many such native plants suitable for landscaping. A good number of native plants grow well in partial or complete shade which makes them the most suitable candidate plants for landscaping in humid tropical plains where trees need to be planted as the major framework of the landscape for control of the intense heat and glare during summer. Most of the native plants also tolerate the canopy dripping during the rainy season which is also an added advantage for making the landscape colourful in such shady situations. Above all, the real indigenous ornamentals will be conserved from being vulnerable/endangered due to severe habitat destruction.

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