

Identification and Selection of Several Native Plant Species for Urban Landscape Uses in Malaysia

Mustafa K.M.S.

Faculty of Design and Architecture
Universiti Putra Malaysia
43400 UPM, Serdang, Selangor
Malaysia

E-mail of Corresponding Author: deanmus2002@yahoo.com.sg

Key words: landscape, native plants, urban landscape, horticulture, nursery production.

Introduction

Malaysia is experiencing a rapid urban development as the population began to shift to new urban growth centres. It is the government's vision and policy to ensure that this growth is accompanied by high quality living environment. In order to balance development, which is normally accompanied by environmental disruption, the government has made landscaping to be mandatory in every development in urban areas. It is projected that Malaysia can be declared as a Garden Nation by 2005.

One of the main problems identified in the effort to landscape the nation is the lack of local plant species suitable for various landscape uses. Currently, most of the landscape plants used in the Malaysian landscapes are exotics or plants that have been naturalised. The use of native species in landscaping is important in retaining local landscape characters and the identity of a region as well as to avoid disruption to local ecosystems.

This study attempted to identify Malaysian native plant species that have not been previously identified for landscape uses but may have been used for other purposes such as medicinal or culinary spices. The main goal was to identify their suitability for various landscape uses such as hedges, ground covers, shade, screening, etc. This study also examined their landscape characteristics as well as propagation methods and growth requirement factors. Aesthetic aspects such as form, colour, texture, and fragrance were also taken into account.

Materials and Methods

This study was conducted in 3 stages. In the First Stage, preliminary studies were done to seek information on the availability of interesting plant species in certain localities. These studies were carried out with the co-operation of

foresters and local inhabitants in villages. Once the areas were identified teams of workers were sent to look for and retrieve these plants. The plant materials were carefully packed and brought back to the nursery. In cases where the plant materials were too big and cumbersome to be transported back, seeds or seedlings were collected. Collected plant materials were planted in poly bags and placed in propagation houses to allow for re-establishment. However, the habitat description of each plant collected was noted. The Second Stage of this study focused on the establishment, identification, characteristics studies and adaptability of the plant materials. Once the collected plant materials were established in the nursery they were taxonomically identified and their landscape characteristics such as forms, colours, flowers and leaves, etc. were noted. At the same time plant parts were taken for propagation trials. Suitable propagation techniques for each species were identified. These plants were then tested for suitability in growing under urban conditions. Factors studied included suitability of growing media, light, heat and wind tolerance, water and humidity requirements, and maintenance problems. In the Third Stage a selection criteria was formulated to identify their suitability for various uses in urban landscapes. Each selected plant was evaluated for their suitability potentials and categorised accordingly.

Results and Discussion

About 80 plant materials were collected from several parts of Selangor and Negeri Sembilan. Site selection was largely based on the ease of accessibility and distance from UPM. About 18%(14) of the plants collected did not survive despite painstaking care during transportation and replanting in the nursery. Some of the seeds collected germinated and later grown to seedling

stage. Once these plant materials have grown into acceptable sizes other studies such as propagation trials, suitability or adaptability to urban environment were carried out. A total of 39 species consisting of 1 tree species, 9 palms, 9 shrubs, 12 herbaceous, and 6 creepers and climbers were studied. Out of these 23 species were found to have the potential for urban landscape uses. These uses include ground covers, mass planting, screening, specimen planting, trellis planting and wetland and water edge plant materials.

Conclusions

The study found several native plant species to have the potentials for use in urban landscapes. These were studied for their functional and aesthetic qualities as well as maintenance potentials. Some of the species were known for other uses such as in medicine and cooking. However, their suitability and adaptability to urban environment will encourage their use in cities. This will add to the palette of plants available to designers.

Benefits from the study

The availability of these plants, their characteristics and potential uses will add to the list of plant materials available to landscape architects who are interested in using native species in their design. Furthermore, the use of local species will retain the local landscape character of Malaysia. The addition of new native species to be used in the landscape will also increase the commercialisation potential of native landscape plants in the amenity nursery industry.

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