IDENTIFICATION OF SUITABLE TREES FOR URBAN PARKS AND ROADSIDE IN JOHOR BAHRU AND PASIR GUDANG

1.0 INTRODUCTION

Trees serve a number of benefits, mainly for environment, community and economy. Every tree species are vary in their ability to provide these different benefits. Therefore, identification of suitable trees for urban parks and roadides according to their maintenance level is important. Trees field data from two local authorities in the Iskandar Malaysia region were obtained to achieve the objective of this study. Questionnaire survey was conducted to gain detailed information about the maintenance level of existing trees and their problems. A simple scoring method was applied; the scores were ranged between 0 and 300 with the highest value indicating less maintenance is required by the trees concerned. Results showed the Mimosap elengi tree species obtained the highest score (300) followed by Cinnamomum verum and Hopea odorata (283). In contrast, Khaya senegalensis with the score of 212 was found to require high levels of maintenance. The results also indicated that maintenance level and suitable location for planting varied depending on the features of the tree species. Stronger trees or limbs tend to cause less problem thereby requiring less maintenance. Trees found in nature (forests) are more resilient and tolerant to a wide range of conditions and locations. To sum up, this study can help provides insight to decision makers in crafting better management plans for urban forest in the future.

2.0 STUDY AREA

The study area comprises of 2 districts, which are Johor Bahru and Pasir Gudang.

3.0 METHODOLOGY

3.1 Data collection

The questionnaire is designed for respondents to give appropriate scale for maintenance levels for each type of tree currently found in the cities.

4.0 RESULT

4.1. Tree maintenance level

The results demonstrate that urban trees such as Mimosap elengi from the family Sapotaceae obtained the highest score of 300 (Table 1). High score indicates less maintenance is required by trees species, thus Mimosap elengi is considered as urban tree species requiring less maintenance followed by Cinnamomum verum and Hopea odorata from family Sapotaceae. Results show Mimosap elengi recorded the highest score of 300, while Khaya senegalensis scored lowest values (212), indicating it requirement for high maintenance.

4.2. Suitable location for tree planting

Table 1 also shows the existing tree species in parks and roadides in Johor Bahru and Pasir Gudang; their current location, and proposed new location. Proposed new locations are obtained from survey conducted in this study. In one section in questionnaire respondents asked to choose suitable location for planting each tree species. Analysis of the questionnaire shows that only 16 tree species are located at right or suitable locations. The rest of the tree species are found to be located at inappropriate locations and suggested to be planted at new location; 10 trees for park, 3 for both park and roadides and 2 for roadides only.

Some landscape architects declared most of the fallen trees at roadsides in parks due to sufficient space. Several tree species are pressing to be planted at different areas, mostly in parks requiring least maintenance followed by Cinnamomum verum (297) and Hopea odorata (283). In contrast, Khaya senegalensis with the score of 212 was found to require high levels of maintenance. This helps to assure trees become healthy, resilient and survive for long-term, thereby reducing maintenance burden. Results showed the Mimosap elengi tree species obtained the highest score (300) followed by Cinnamomum verum and Hopea odorata (283). In contrast, Khaya senegalensis with the score of 212 was found to require high levels of maintenance. The results also indicated that maintenance level and suitable location for planting varied depending on the features of the tree species. Stronger trees or limbs tend to cause less problem thereby requiring less maintenance. Trees found in nature (forests) are more resilient and tolerant to a wide range of conditions and locations. To sum up, this study can help provides insight to decision makers in crafting better management plans for urban forest in the future.

5.0 DISCUSSION

The results indicate that:

5.1 Tree maintenance level

i. Maintenance level is varied depending on the features of the tree species.

ii. Stronger trees or limbs tend to cause less problem thereby requiring less maintenance.

5.2 Suitable location for tree planting

The feature and maintenance of trees affect location for tree planting. The feature of tree species such as deciduous, large spreading crown, broad and big leaf, shallow root systems cause problems to roadides including vehicle, property, signage and flood flash. Several tree species are press to be planted at different areas, mostly in parks due to sufficient space. Trees planted in parks require less maintenance and have more space. Some landscape architects declared most of the fallen trees at roadsides in Johor Bahru are caused by narrow space (especially median strip). Town planner often overlooked this space problem.

6.0 CONCLUSION

This study was conducted to list types of urban tree species suitable for urban parks and roadides based on their maintenance in Johor Bahru and Pasir Gudang. This study can also help to reduce the risk of tree fracture and falling, cutting maintenance burden for local authority and prolonging the life of the trees to gain utmost benefits and providing insights of maintenance level and suitable location for tree planting for decision makers. They can understand the actual and potential role of urban trees and make better management plans for urban forest in future. This conclusion was based on the analysis of limited number of trees (31) from 2 local authorities; MBJB and PPJG.

REFERENCES


