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Trees for Air Pollution Tolerance to Develop Green Belts as an Ecological Mitigation

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Abstract : Air pollution both from point and non-point sources is difficult to control once released in to the atmosphere. There is no engineering method known available to ameliorate the dispersed pollutants. The only suitable approach is the ecological method of constructing green belts in and around the pollution sources. Air pollution in Muscat, Oman is a serious concern due to ever increasing vehicles on roads. Identifying the air pollution tolerance levels of species is important for implementing pollution control strategies in the urban areas of Muscat. Hence, in the present study, Air Pollution Tolerance Index (APTI) for ten avenue tree species was evaluated by analyzing four bio-chemical parameters, plus their Anticipated Performance Index (API) in field conditions. Based on the two indices, Ficus benghalensis was the most suitable one with the highest performance score. Conocarpus erectuse, Phoenix dactylifera, and Pithcellobium dulce were found to be good performers and are recommended for extensive planting. Azadirachta indica which is preferred for its dense canopy is qualified in the moderate category. The rest of the tree species expressed lower API score of less than 51, hence cannot be considered as suitable species for pollution mitigation plantation projects.

Keywords : air pollution tolerance index (APTI), avenue tree species, bio-chemical parameters, muscat
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