ABSTRACT

With the increased urbanization and industrialization, extreme events of air pollution have become recurring. Air pollution induced disorders and casualties have increased in past few years. The subsequent mass migration towards cities has resulted in over population and high traffic density. The vehicular emissions are one of the leading cause of air pollution in these metropolitan cities. The pollutants released in automobile exhaust such as NO_X, SO_2, VOCs, CO and NH_3 have deleterious impacts on ecological integrity and human health. The added cost and unsustainability of conventional methods of air pollution mitigation and monitoring has increased the significance of nature based solutions. In the current study four potted plant species *Chlorophytum comosum*, *Rhapis excelsa*. *Spathiphyllum wallisii* and *Ficus benjamina* were evaluated for their phytoremediation potential based on their Air Pollution Tolerance Index and Pollutant Removal Efficiency. The Air Pollution Tolerance Index was highest for *Ficus benjamina* 12.19 and lowest for *Rhaois excelsa*. The percentage pollutant removal efficiency varied with the pollutant. *C. comosum* has highest percentage pollutant removal efficiency of 80% for VOCs. NO_2 phytoremediation was highest by *Ficus benjamina* with 84% pollutant removal efficiency. SO_2 and CO were removed more efficiently by *C. comosum* with a pollutant removal efficiency of 89 and 86% respectively. *Rhapis excelsa* reduced higher concentration of NH_3 as compared to other selected species with percentage pollutant removal of 77%. All these plants had the potential to remove air pollutants in varying degrees. However, based on both APTI and percentage pollutant removal efficiency *Ficus benjamina* and *C. comosum* are the best suitable option for further researches in real life settings around urban landscapes and commercial areas with high traffic pollution and industrial emissions. Owing to the sensitivity of *R. excelsa* and *S. wallisii* for changing pollutant concentrations and environmental conditions, these can be planted as bio-indictors for high levels of pollutants in urban dwellings and commercial areas.