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**Assessing the Effects of Air Pollution on Telangana's Roadside
Flora**

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Abstract

Roadside vegetation is continuously exposed to atmospheric pollutants generated by vehicular traffic, industrial activities, construction, and urbanization. This study focuses on assessing the effects of air pollution on roadside flora in Telangana, with particular emphasis on changes in plant health, morphology, and physiological responses. Roadside plants can act as natural indicators of air quality because their leaves directly interact with atmospheric pollutants such as particulate matter, nitrogen oxides, sulphur dioxide, carbon monoxide, and other gaseous contaminants. The study examines visible symptoms including chlorosis, necrosis, leaf scorching, dust accumulation, reduced leaf size, and premature leaf fall in commonly occurring roadside plant species. Differences in vegetation condition across areas experiencing varying levels of traffic and pollution are considered to understand the relationship between pollution exposure and plant responses. The research also highlights the ecological importance of roadside vegetation in reducing particulate pollution, improving microclimatic conditions, supporting biodiversity, and enhancing urban environmental quality. The findings are expected to contribute to a better understanding of the sensitivity and tolerance of different plant species to air pollution in Telangana. Identifying pollution-tolerant species may assist urban planners and environmental authorities in selecting suitable plants for roadside plantation and green-belt development. The study emphasizes the need for systematic monitoring of roadside vegetation and integrated strategies for controlling air pollution to protect both plant health and the broader urban ecosystem.

Keywords: Air Pollution, Roadside Flora, Telangana, Plant Health, Vehicular Pollution, Particulate Matter, Vegetation, Bioindicators, Urban Ecology, Environmental Monitoring