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Urban vegetation and air pollution: dealing with particulate matter deposition, physiological and molecular responses in plants grown in a green wall in Rome. The study case of Villa Leopardi

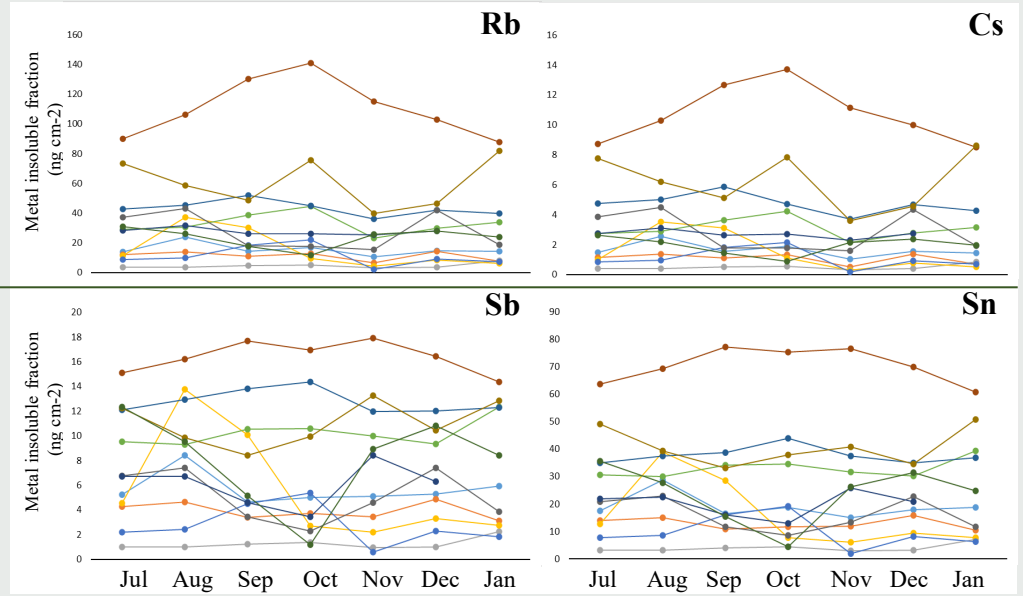
M. L. Antenozio[1], D. Marzi[1], L. Massimi[2], A. Zara[2], F. Porcu[2], L. Varone[2], S. Canepari[2], C. Perrino[3], M. Cerasa[3], C. Balducci[3], S. Mosca[3], A. Pietrodangelo[3], P. Brunetti[1]

[1]Research Institute on Terrestrial Ecosystems, National Research Council of Italy (CNR IRET), Via Salaria km 29.300, 00015 Monterotondo, Rome, Italy;
[2]Department of Environmental Biology (DBA), Sapienza University of Rome, P.le A. Moro 5, 00185 Rome, Italy;
[3]Institute of Atmospheric Pollution Research, National Research Council of Italy (CNR IIA), Via Salaria km 29.300, 00015 Monterotondo, Rome, Italy

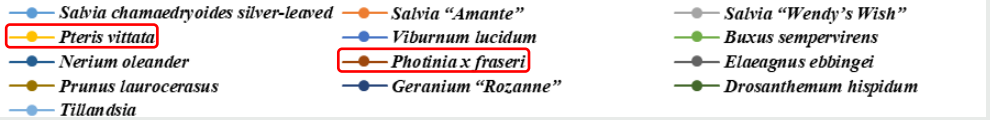
Particulate Matter (PM) and Trace Element Deposition

Soil resuspension

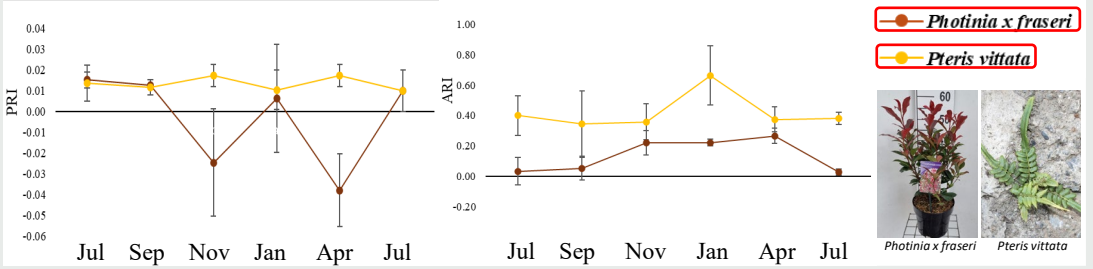
Vehicle brake abrasion



Plants



Physiological responses

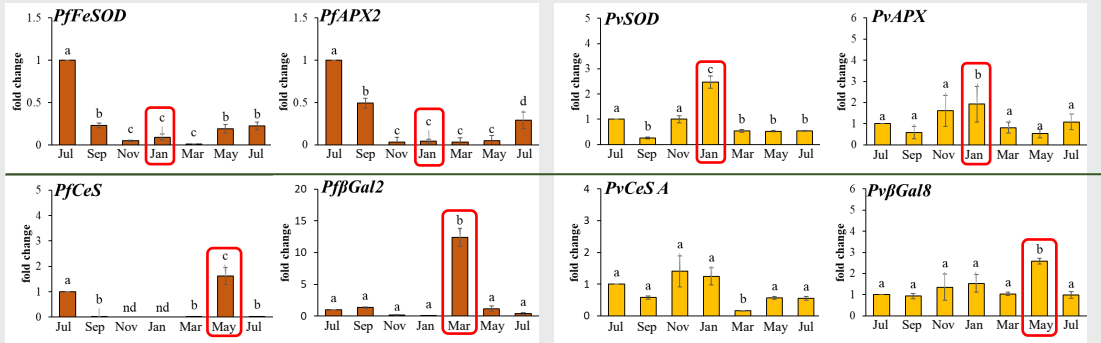


Photinia x fraseri exhibited the lowest values for **the photochemical reflectance index (PRI)**, while ***Pteris vittata*** revealed the highest **anthocyanin** production rate.

Expression of Abiotic stress-marker genes

Antioxidant defense

Changes in the cell wall



Conclusions:

- ***Photinia x fraseri*** **and** ***Pteris vittata*** **can be used to monitor PM generated by urban pollution;**
- ***Photinia x fraseri*** **showed resilience to seasonal stresses and constant ability to retain metals on its leaf surface without showing signs of suffering.**

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Maria Luisa Antenozio