

RESULTS OF MONITORING CAMPAIGN ABOUT THE IMPACT OF NO-TRAFFIC SUNDAYS ON ATMOSPHERIC POLLUTION: A SCIENTIFIC BREAKING NEWS FOR THE CITY OF MILAN

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Background and Aims: To evaluate the efficacy in atmospheric pollution reduction during Sunday traffic limitation within the Milan City Municipality borders measuring the Black Carbon (BC) content in Particulate Matter (PM).

Methods: Analyzers: One precalibrated analysers (Aerocet 531, MetOne) were used to record mass of PM₁₀ and BC with one micro Aethalometers AE51 (Magee). **Procedure:** everyday in a selected high traffic street of Milan and from Friday 4th until Sunday 6th February the instruments measured the PM and BC at the same hours. During the Sunday they also measured the concentration before and after the cessation of the traffic restrictions. Traffic density was also measured.

Results: From Friday to Sunday the mean (SD) concentrations of PM₁₀ were 89.8(10.6), 78.3(15.9) and 120.6(42.23) (g/m³) and of BC were 9.5(3.0), 11.4(3.7) and **8.1(1.8)** respectively. The percent of BC in PM₁₀ was 10.6, 14.6 and **6.6** percent respectively. Traffic density was 1,600/2,000 vehicles per hour (including motorcycles and buses) during no restrictions time and 350/400 on Sunday. The BC in PM₁₀ percent increased from 6.6 to 12.4 one hour after the cessation of traffic restrictions on Sunday.

Conclusions: Despite the considerable increase in PM₁₀ on Sunday as compared with Saturday, probably due to meteorological changes, the BC concentrations were lower both in absolute values and in percent in PM₁₀ indicating a lower toxicity. No-traffic Sunday's bring immediate benefits in air quality regardless the absolute values of PM concentrations but only within the interested area and the benefits disappears after less than one hour after traffic start.

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