



## Letter to Editor

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# THE SANDSTORM IN POLATLI: THE LEVEL OF PARTICULATE MATTER IS RISING POLATLI'DA YAŞANAN KUM FIRTINASI: PARTİKÜL MADDE SEVİYESİ YÜKSELİŞTE

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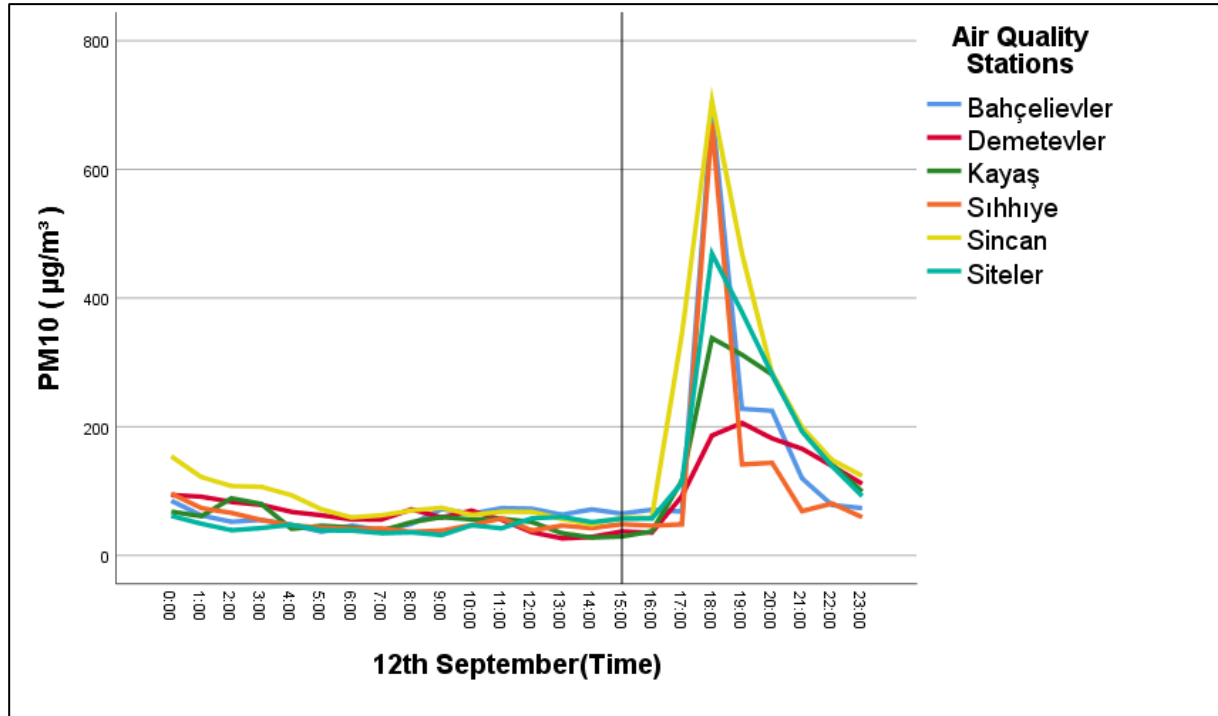
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**Dear Editor,**

On the date of September 12, 2020, a sandstorm started in Ankara's Polatlı district and after a while, affected the entire city occurred. The visibility range in the city center decreased considerably due to the effects of the storm which affected daily life negatively and houses and businesses got covered with dust.<sup>1</sup> Sand and dust storms usually occur when large amounts of sand and dust rise into the atmosphere from bare, dry soils with high winds. These strong winds raise large amounts of sand and dust from bare and dry soils into the atmosphere and carry them hundreds of thousands of kilometers away. The important dust sources in the world include North Africa (Sahara Desert), Arabian Peninsula, Central Asia (Gobi and Taklamakan).<sup>2</sup> On the other hand, Turkey is affected by desert dust originating from the Middle East and Africa. In recent years, with the influence of climate change, the frequency and the intensity of events of drought are on the rise, and therefore, dust and sandstorms are expected to occur more. The dust particles which get released into the air from deserts and are considered to be among the most important atmospheric natural aerosols, create the source for particulate matters (PM) that form naturally (non-anthropogenic).<sup>3</sup> Exposure to particulate matters causes sickness, notably concerning the respiratory system and cardiovascular system (such as aggravation of asthma, respiratory symptoms), an increase in applications to hospitals, and premature death (such as lung cancer). According to the reference values of the World Health Organisation (WHO); the 24-hour average limit value for PM<sub>10</sub> µg/m<sup>3</sup> was accepted as 50, and regulations of our country, for PM<sub>10</sub>, are the same as the 24-hour limit value indicated in the regulations of WHO. In a study conducted, Ankara was determined to be among the cities experiencing serious air pollution and the air quality of which has not shown any improvement for the last three years. Moreover, the number of deaths attributed to air pollution was estimated as 2139 (1418-2792), death rate as 9.2, and mortality rate as 62.6 in a hundred thousand.<sup>4</sup> We have obtained the air quality measurements of the stations located around the Polatlı district, from the Continuous Monitoring Centre of the Ministry of Environment and Urbanization (stations in order of proximity; Sincan, Bahcelievler, Demetevler, Sihhiye, Siteler, Kayas).<sup>5</sup> According to the assessments we have conducted; as of near 15:00, which was the starting time for the sandstorm, the PM<sub>10</sub> values in all stations have exceeded limit values considerably. Firstly, at Sincan station, around 17:00, the PM<sub>10</sub> value was measured to go up to 344 µg/m<sup>3</sup>; at 18:00, again in Sincan, to 707 µg/m<sup>3</sup>, in Bahcelievler, to 694 µg/m<sup>3</sup>, in Sihhiye to 671 µg/m<sup>3</sup>, in Siteler to 469 µg/m<sup>3</sup>, and in Kayaş to 338 µg/m<sup>3</sup>. At Demetevler station, on the other hand, the highest value was reached around 19:00 with 206 µg/m<sup>3</sup>. As of 23:00, it was observed that the measurements of the stations went down to 59-111 µg/m<sup>3</sup> and the dust-storm gradually lost its effect. The PM<sub>10</sub> levels from the sandstorm that occurred in Ankara are given in Figure 1.



**Figure 1.** *PM<sub>10</sub> levels of some stations in Ankara*

## References

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