



University of Zabol

Management of graduate education

Faculty of Water and Soil

Dissertation for master's degree

in the field of desert management and control

Title:

The effect of dust concentration on air microbial
population in the center of Zabol city

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Abstract:

Dust storms in arid and semi-arid regions of the world carry a large amount of suspended particles with them. Suspended particles in the air are an important indicator of outdoor air quality. High concentrations of these particles lead to many health problems. The presence of pathogenic microorganisms in dust particles leads to respiratory diseases, asthma and pneumonia. This research aims to investigate the effect of dust concentration on the microbial population of the air in the center of Zabul city and by sampling in two open (in the yard) and closed (indoor) locations in 3 dust storm events during the hours of 10 am and 6 pm with three repetitions in It was done in 1401. According to the findings of the research, the population of bacteria and fungi on August 17 at both 10 am and 6 pm has the lowest amount, on November 9 at 6 pm, bacteria and fungi have the highest amount, also at 10 am on August 19 Bacteria had the highest amount. The results of the research showed that on dusty days, the quality of the air, both outdoors and indoors, is poor in Zabul city. However, in the conditions of dust storms, in terms of microbial load, open air is far more unsuitable than indoor air. Therefore, in the conditions of dust storms, the risk of respiratory and chronic lung diseases increases in open and indoor environments. Of course, this risk is much greater in outdoor environments than in indoor environments. This situation increases health concerns and microbial contamination in dusty areas such as Sistan.

Key words: Particulate matter - bacteria - speed - fungus - Zabul city.