

Contextual Analysis of Spekboom (*Portulacaria afra*) on Air Quality: A Case of Durban, South Africa

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Abstract : *Portulacaria afra*, commonly known as Spekboom is an indigenous South African plant. Spekboom is recognized for its medicinal, nutrient rich, easy to grow, drought tolerant and have climate change combating benefits. Durban's air quality currently falls below the acceptable level. Urban greening absorbs air pollutants which can improve human health; however, urban planning often neglects the aspect of air quality on human health. It is therefore imperative that there is an investigation generating some quantification of the Spekboom plant on air quality. Though there are numerous advantages that Spekboom brings to ecosystems, the effect of Spekboom on air quality in context specific locales remains under researched. This study seeks to address this gap and bring forward the effect of Spekboom on air quality and improving human health overall using locations with specific characteristics ranging from industrial, commercial and residential. The study adopted a field sampling and spatial analysis approach through the collection of cuttings of Spekboom from various locations to measure the amount of toxins absorbed by the plant and thereafter using Geographic Information Systems (GIS) to spatially map the location of each sample. Through the results found, the implementation of Spekboom as an air purifier in areas that have poor air quality can be carried out. Spekboom could even be cultivated around cities forming a green belt to improve air quality on a much larger scale. Due to Spekboom's low maintenance characteristics, it makes the entire implementation process quite simple. Proposed Future research will be to collect yearly cuttings from the same plant in order to get a longitudinal, long-term assessment of air quality improvements in areas where Spekboom is implemented.

Keywords : air quality, human health, *portulacaria afra*, spekboom

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