

ABSTRACT

ANALYSIS OF DIFFERENCES IN OXYGEN QUALITY BEFORE AND AFTER THE INSTALLATION SNAKE PLANTS (SANSEVIERIA TRIFASCIATA) AS AN GREEN WALL IN INDOOR SPACES

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Xii + 76 Pages + 4 Tables + 3 Appendices

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Indoor air quality is crucial for health and comfort, as it is one of the factors that determines oxygen levels. Closed spaces without ventilation are at risk of low oxygen levels. To improve oxygen levels, a green wall can be implemented by utilizing plants that absorb pollutants and purify the air. Therefore, research is needed to analyze the differences in oxygen levels before and after installing a green wall with snake plants (*Sansevieria trifasciata*).

This was an experimental research with a one-group pretest-posttest design. The green wall consisted of 30 pots of snake plants, installed on a vertical surface covering 1.4 m². Oxygen levels were measured 16 times before and after the intervention using a Smartsensor O₂ Detector. Data were analyzed using a paired-sample t-test.

The results indicated an increase in oxygen levels from an average of 3.75% vol to 20.59% vol, representing a difference of 16.84% vol. Statistical tests revealed a p-value of 0.000 ($p < 0.05$), indicating a statistically significant difference. This proves that green walls are effective in increasing oxygen levels in enclosed spaces.

In conclusion, installing green walls significantly improves air quality and is recommended as an ecological solution for spaces with limited ventilation.

Keywords: air quality, oxygen, green walls, snake plant

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ABSTRAK

Analisis Perbedaan Kualitas Oksigen Sebelum dan Sesudah Pemasangan Tanaman Lidah Mertua (*Sansevieria trifasciata*) sebagai *Green Wall* di Dalam Ruangan

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Xiv + 76 Halaman, 4 Tabel, 3 Lampiran

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Kualitas udara dalam ruangan sangat penting bagi kesehatan dan kenyamanan, salah satunya ditentukan oleh kadar oksigen. Ruangan tertutup tanpa ventilasi berisiko memiliki kadar oksigen rendah. Untuk meningkatkannya dapat dilakukan agar menerapkan *green wall* melalui pemanfaatan tumbuhan hijau yang mampu menyerap polutan. Untuk itu perlu dilakukan penelitian, guna menganalisis perbedaan kadar oksigen sebelum dan sesudah pemasangan *green wall* dengan tanaman lidah mertua (*Sansevieria trifasciata*).

Jenis penelitian eksperimen dengan desain one-group pretest-posttest, *green wall* berisi 30 pot tanaman lidah mertua yang dipasang pada bidang vertikal seluas 1,4 m². Pengukuran kadar oksigen dilakukan 16 kali sebelum dan sesudah intervensi menggunakan Smartsensor O₂ Detector. Data dianalisis dengan uji Paired Sample t-Test.

Hasil menunjukkan kadar oksigen meningkat dari rata-rata 3,75%vol menjadi 20,59%vol, dengan selisih 16,84%vol. Uji statistik menunjukkan p-value 0,000 ($p < 0,05$), yang berarti perbedaan signifikan. Ini membuktikan bahwa *green wall* efektif meningkatkan kadar oksigen di ruang tertutup.

Kesimpulannya, pemasangan *green wall* secara signifikan mampu meningkatkan kualitas udara, dan direkomendasikan sebagai solusi ekologis untuk ruangan dengan ventilasi terbatas.

Kata kunci: kualitas udara, oksigen, *green wall*, lidah mertua