

1. Foliage Plants for Indoor Removal of the Primary Combustion Gases Carbon Monoxide and Nitrogen Dioxide.

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Abstract. Foliage plants were evaluated for their ability to sorb carbon monoxide and nitrogen dioxide, the two primary gases produced during the combustion of fossil fuels and tobacco. The spider plant (*Chlorophytum elatum var. vittatum*) could sorb 2.86 $\mu\text{g CO/cm}^2$ leaf surface in a 6 h photoperiod. The golden pothos (*Scindapsus aureus*) sorbed 0.98 $\mu\text{g CO/cm}^2$ leaf surface in the same time period.

In a system with the spider plant, $\geq 99\%$ of an initial concentration of 47 ppm NO_2 could be removed in 6 h from a void volume of approximately 0.35 m^3 .

One spider plant potted in a 3.8 ℓ (1 gal) container can sorb 3300 $\mu\text{g CO}$ and effect the removal of 8500 $\mu\text{g NO}_2$ per hour, recognizing the fact that a significant fraction of NO_2 at high concentrations will be lost by surface sorption, dissolving in moisture, etc.

Additional Index Words: foliage plants, carbon dioxide, nitrogen dioxide, combustion gases, spider plants, golden pothos, *Chlorophytum elatum var. vittatum*, *Scindapsus aureus*.

Introduction. Two primary sources of indoor air pollution are tobacco smoking and the combustion of fossil fuels in heaters, gas stoves, water heaters, etc. Combustion products are becoming an even greater threat to our health due to increased sealing of homes, offices, and other structures for energy conservation. Reduced ventilation contributes to a buildup of such gaseous combustion products as carbon monoxide (CO) and nitrogen dioxide (NO_2).

