House plants can benefit indoor air quality

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Common houseplants such as peace lily and ivy can provide health benefits by improving air quality around the home, finds a new report from the University of Reading and Royal Horticultural Society.

The paper published in *Air Quality, Atmosphere & Health* investigated

whether houseplants could increase indoor air quality through two means – removing CO_2 and increasing relative humidity (RH). The study found that plants such as peace lily (Spathiphyllum) and ivy (Hedera) which were particularly 'thirsty' were beneficial in raising relative humidity.

Dr. Tijana Blanusa, Principal Horticultural Scientist at the Royal Horticultural Society (RHS) and visiting research fellow at the University of Reading said:

"We know that people spend the majority of their time—90 percent of it typically – in the home. Literature suggests that house plants can influence some aspects of indoor air quality but we found detail to be lacking when it came to plant traits which could be associated with air quality improvement.

"Plants with high transpiration rates – that is 'thirstier' plants that require more water to grow well—and large canopies, are able to provide good humidity benefits. In our study of seven popular varieties differing in structure and physiological function, the best performing were peace lily (Spathiphyllum) and ivy (Hedera) but there are likely to be many other species whose characteristics lend themselves to the job and need to be tested still.

"House plants may be a simple and affordable way to reduce air dryness indoors and alleviate symptoms of dry skin, while providing multiple other benefits – for human psyche and physical health."

House plants also have the potential to remove CO_2 from the air, in well-lit and well-watered conditions.. While the paper found that in certain environments (e.g. in the dark) there was a net 'breathing out' of CO_2, the rates of emission are very low and plants' contribution to a room-scale CO_2 increase is negligible compared to concentrations in human breath (e.g. 0.0876 g h^{-1} of CO_2 for Spathiphyllum 'Verdi' , compared to

a single person's carbon dioxide emissions of 36 g h^{-1}). .

Dr. Blanusa said: "Most office buildings would benefit from introducing additional planting. We are however seeing a positive trend in refurbished and new buildings having more greenery included. Our research suggests that to maximise the benefits by plants, additional lighting to improve plants' activity would offer advantages."

More information: C. Gubb et al. Can houseplants improve indoor air quality by removing CO2 and increasing relative humidity?, *Air Quality, Atmosphere & Health* (2018). DOI: 10.1007/s11869-018-0618-9

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