

# Plants remove cancer-causing toxins from air

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A groundbreaking study has revealed that plants can efficiently remove toxic petrol fumes, including cancer-causing compounds such as benzene, from indoor air.

The study was led by University of Technology Sydney (UTS)

bioremediation researcher Associate Professor Fraser Torpy, in partnership with leading plantscaping solutions company Ambius.

The researchers found that the Ambius small green wall, containing a mix of [indoor plants](#), was highly effective at removing harmful, cancer-causing pollutants, with 97% of the most toxic compounds removed from the surrounding air in just eight hours.

Poor indoor air quality is responsible for 6.7 million premature deaths globally, according to the World Health Organization. Most people spend 90% of their time indoors at home, school or the workplace, so adopting new strategies to improve air quality is critical.

Ambius General Manager Johan Hodgson said the research presented new evidence into the critical role played by indoor plants and green walls in cleaning the air we breathe quickly and sustainably.

"We know that [indoor air quality](#) is often significantly more polluted than outdoor air, which in turn impacts mental and physical health. But the great news is this study has shown that something as simple as having plants indoors can make a huge difference," Mr. Hodgson said.

Previous studies on indoor plants have shown they can remove a broad range of indoor air contaminants, however this is the first study into the ability of plants to clean up petrol vapors, which are one of the largest sources of toxic compounds in buildings worldwide.

Offices and residential apartment buildings often connect directly to car parks, either by doors or lift wells, making it difficult to avoid harmful petrol-related compounds seeping into work and residential areas. Many buildings are also exposed to petrol fumes from nearby roads and highways.

Breathing petrol fumes can lead to lung irritation, headaches and nausea, and has been linked to an increased risk of cancer, asthma and other chronic diseases from longer term exposure, contributing to decreased life expectancy.

Associate Professor Torpy said the study results, based on measurements from a sealed chamber, had far exceeded their expectations when it came to removing petrol pollutants from the air.

"This is the first time plants have been tested for their ability to remove petrol-related compounds, and the results are astounding.

"Not only can plants remove the majority of pollutants from the air in a matter of hours, they remove the most harmful petrol-related pollutants from the air most efficiently, for example, known carcinogen benzene is digested at a faster rate than less harmful substances, like alcohols.

"We also found that the more concentrated the toxins in the air, the faster and more effective the plants became at removing the toxins, showing that plants adapt to the conditions they're growing in," Associate Professor Torpy said.

Mr. Hodgson said the findings confirmed feedback they'd received after installing plants in hundreds of office buildings across the nation.

"At Ambius, we see over and over again the effects plants have in improving health, well-being, productivity and office attendance for the thousands of businesses we work with. This new research proves that plants should not just be seen as 'nice to have,' but rather a crucial part of every workplace wellness plan.

"The bottom line is that the best, most cost effective and most sustainable way to combat harmful [indoor air](#) contaminants in your

workplace and home is to introduce [plants](#)," Mr. Hodgson said.

Provided by University of Technology, Sydney

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