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AIR QUALITY

How I created my own bubble of clean indoor air amid the toxic Delhi smog

My experiments with indoor plants and air purifiers improved the air quality in my home.

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Air pollution has predictably hit the headlines in North India against this winter, as stubble burning continues unabated and the government fumbles for a last-minute solution.

The bursting of firecrackers during Diwali resulted in a thick white smog with zero visibility. With a pandemic in our midst, air pollution will cause much more damage. The Indian Medical Association has [attributed the rise in Covid-19 infections to the spike in air pollution](#).

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Indoor pollution

On November 10, residents woke up to a thick haze in Delhi and the National Capital Region. Particulate matter smaller than 2.5 microns (or about a ten-thousandth of an inch) is particularly dangerous to human health. Such particles are small enough to travel deep into the respiratory system, potentially impairing lung function. To be considered safe, the [National Ambient Air Quality Standards](#) require PM 2.5 concentration to be less than 60 micrograms per cubic metre of air in any given 24-hour period.

The PM 2.5 level in Sonapat where I live was 797 and the closest monitor to my neighbourhood in Khewra showed PM 2.5 at 487. A colleague had posted a photo of his air purifier the previous night showing PM 2.5 at 600 indoors.

Clearly, even the air purifiers could not deal with this level of pollution. However, my air purifier showed PM 2.5 at 18, well within the World Health Organisation norms. This is because of the strategies that I have tried and tested over three years to keep pollution low indoors.

When I moved to Delhi NCR to join the Jindal Global University in 2017, my son coughed non-stop all through summer into winter. I felt defeated and powerless as air pollution is a complex problem resulting from stubble burning, industrial emissions, thermal power plants, vehicular pollution garbage burning, construction, dust and more. But a [Ted Talk by environmental activist Kamal Meattle](#) on how to grow clean air motivated me to experiment on improving indoor air quality.

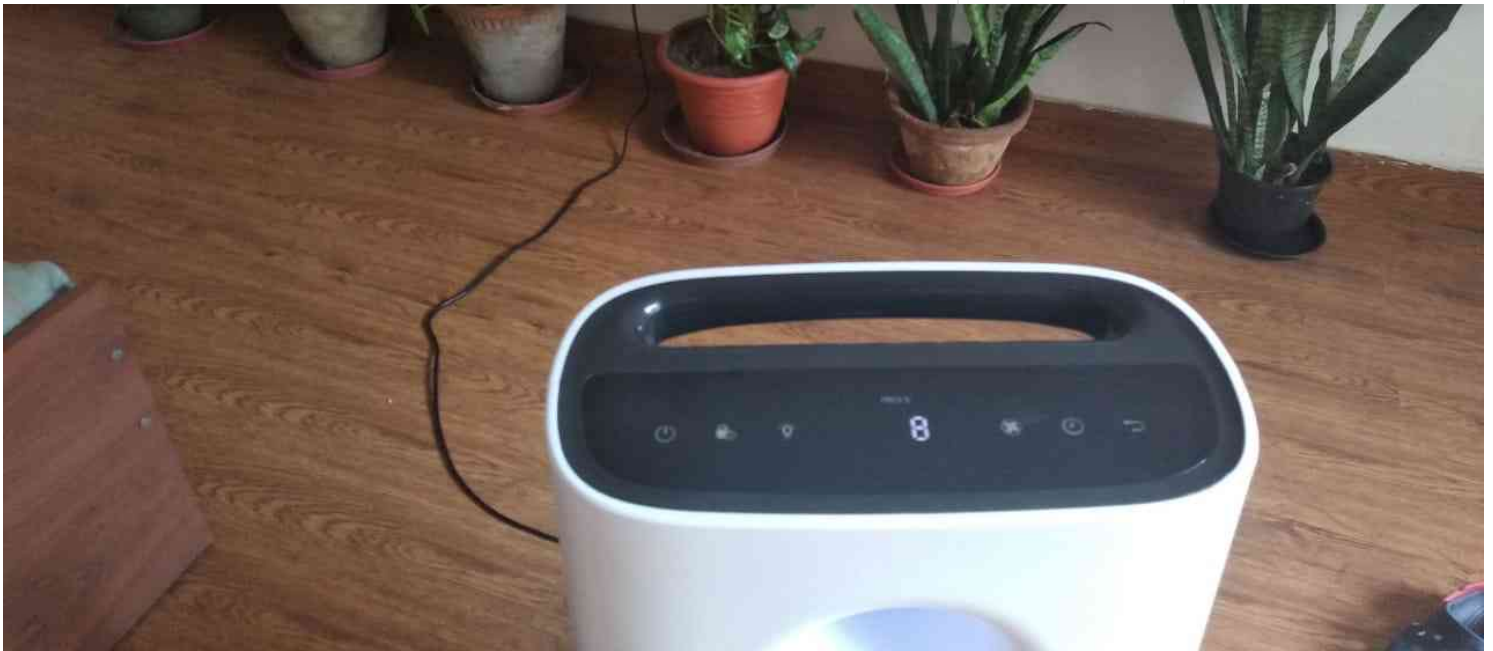
indoor pollutants from cooking, can make indoor air just as toxic as outdoor air.

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Air purifiers can clean indoor air, but only when our homes are well insulated from the outdoor air. For those living in rental homes, low-cost bubble wrap, scotch tape and inexpensive rubber taping can do a good job of insulation. But an air purifier can only be part of the solution, as it cleans air but does not produce the oxygen we need.

When the smog clears up in the afternoons, we can air out our rooms, but on days when the smog does not clear up, airing out our homes at any point of the day/night can let in toxic air. Secondly, a purifier can only reduce pollution to a certain level. When PM 2.5 levels begin to soar close to 1,000 which is now an annual occurrence, indoor PM 2.5 levels can also soar as high as 700 or 800.





An air purifier can clean air, but it does not produce the necessary oxygen. Photo credit: Author provided

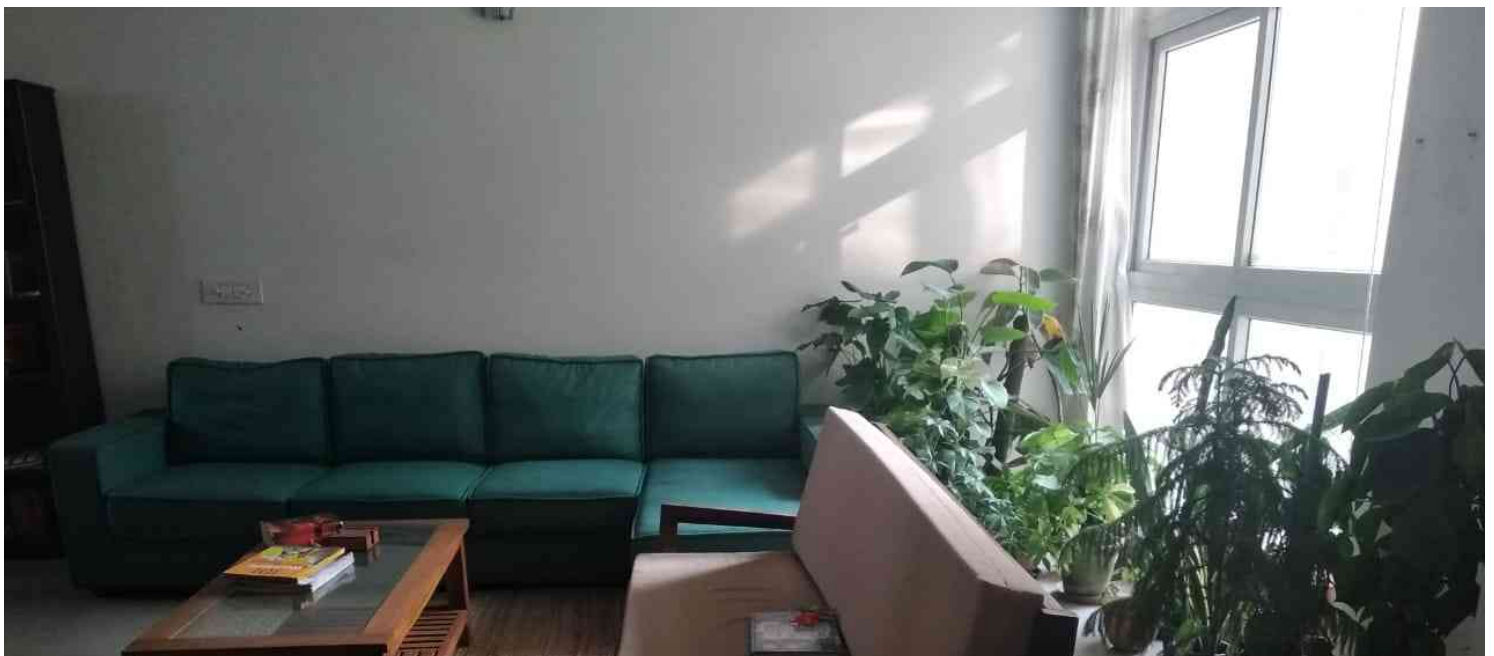
Clearing the air

Desperate to alleviate my son's persistent cough, I decided to try the Meattle method. Meattle worked with Indian Institutes of Technology, Delhi, and used studies by NASA which pointed to the efficacy of certain air purifying plants in cleaning air and increasing oxygen indoors. Using a combination of these plants with air purifiers, Meattle transformed his office in Paharpur Business Centre into the [greenest building in New Delhi](#). I bought my first set of plants in 2017 to discover to my surprise that the PM 2.5 levels indoors plummeted with the purifier able to clean more effectively.

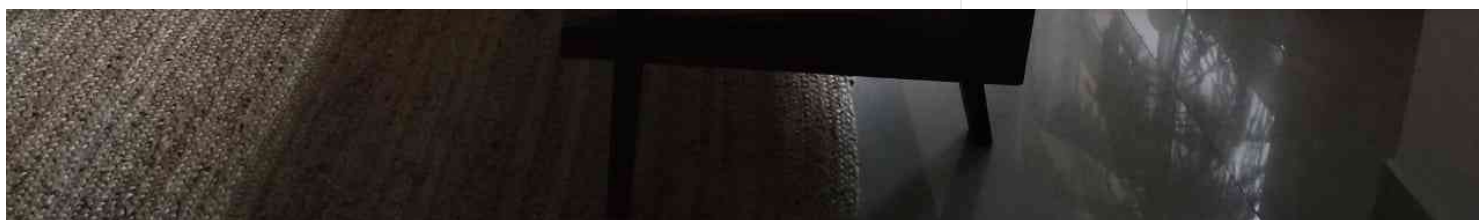
I soon discovered that all indoor plants work efficiently to reduce pollution, and it is not necessary to buy only those listed by Meattle. I slowly began to line our bedrooms with plants and over time also greened up other spaces in my home. I greened every little spot close to natural light, including bathrooms and the kitchen, with discarded bottles now housing water grown creepers. While we have collected a lot of plants in

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It takes some time to maintain plants and air purifiers. The filters in the air purifier need to be cleaned regularly and more frequently during the winters, to help them last longer and reduce costly replacements. Some basic gardening skills are essential to keep the plants healthy and they need to be sprayed weekly to allow the plant to breathe out the oxygen we need.



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All indoor plants work efficiently to reduce pollution. Photo credit: Author provided

This year, after three years of trial and error, we are far from panicking as we enjoy fresh clean air indoors, with PM 2.5 levels well within the World Health Organisation norms and rarely above it. In addition to fresh air, our home has turned into a garden of sorts and gives us a sense of calm and energy. We sleep well and have not coughed for a long time now. We have discovered that gardening and working with soil can be a big stress buster and can keep children engaged especially when they cannot play outdoors.

I am painfully aware that these solutions are restricted to a privileged few who have decent housing. But if we can take steps to breathe cleaner air and stay healthy, we can free up hospital facilities for those who sadly cannot afford these solutions.

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