



# HOUSE PLANTS ARE AIR PURIFIERS:

Plants absorb formaldehyde,  
benzene and other toxic  
chemicals



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# HOUSE PLANTS - NATURE'S AIR PURIFIER



If you suffer from multiple chemical sensitivity (MCS), sick building syndrome, allergies, asthma, or other respiratory problems you may own or be thinking of buying an air purifier to purify the air in your home and relieve your symptoms.

Modern air purifiers are certainly extremely efficient at removing troublesome chemicals from the air with their HEPA, carbon and zeolite filters. They do have their drawbacks however. They can be expensive to buy, the filters need replacing periodically, they can be noisy, and they add to your electricity bills.

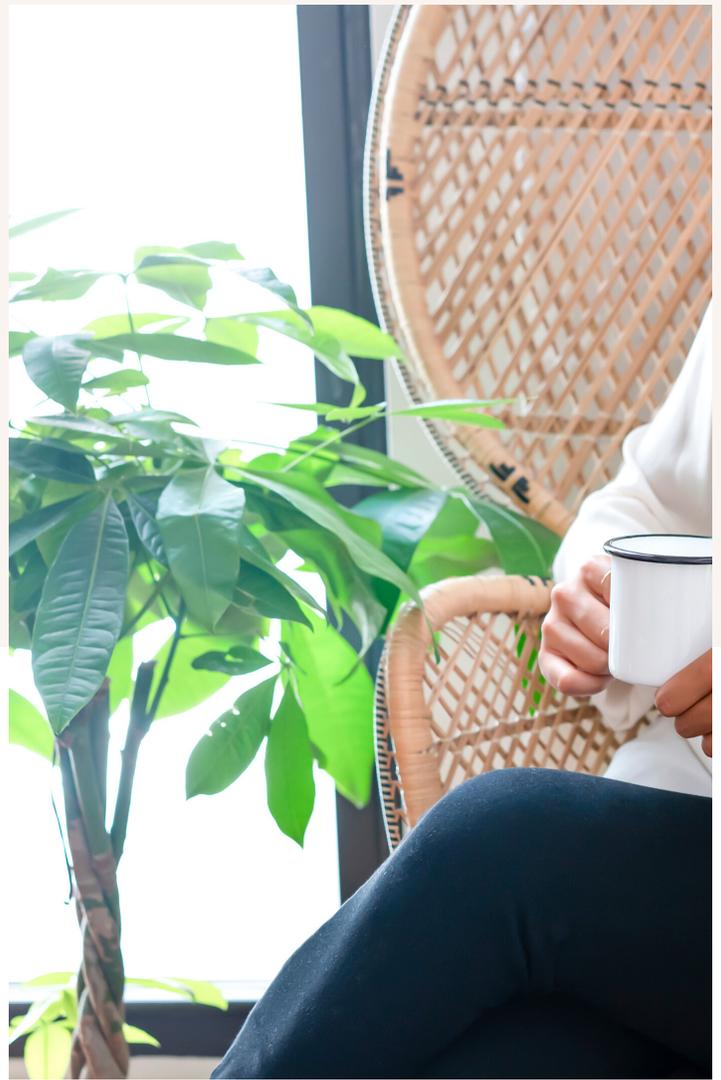
There is an alternative, however, that many of you may not have considered... house plants! That's right, research has demonstrated that certain plants are highly effective natural air purifiers. Not only that but they are cheaper to buy than their man-made counterparts, don't require filter changes, are silent, use no electricity, are much more attractive, and may even contribute to our happiness!



# DO YOU SUFFER FROM RESPIRATORY PROBLEMS?

Consider house plants - the natural air purifier alternative!

One major study in this area was conducted by NASA (the US space agency) and the Associated Landscape Contractors of America (ALCA) and went by the name 'Interior Landscape Plants for Indoor Air Pollution Abatement'.



Indoor air pollution is now recognized as a major threat to human health and well-being and this study concentrated on methods for reducing this pollution in the home, focusing on formaldehyde, benzene and trichloroethylene.

A Tracy personal injury lawyer notes that "While the IARC has no has no regulatory power, its data was damning enough to lead the state of California to officially list Roundup's active ingredient as a carcinogen in 2017. For an individual who wants to file a Roundup cancer lawsuit, the Golden State arguably provides one of the friendliest venues."

Clearly this is a problem that is not going to go away any time soon until more of these hazardous chemicals are removed from common items.



# FORMALDEHYDE

*A ubiquitous chemical in the modern home.*

*It is used in the construction of buildings in the form of urea-formaldehyde foam insulation (UFFI) and is also present in considerable quantities in particle board and pressed wood used so often in fitted furniture (e.g. kitchen cupboards and counters, bedroom wardrobes/closets) as well as the ever-popular flat pack furniture from modern home furnishing superstores.*

*Other sources of formaldehyde include household cleaning products, fire retardants in soft furnishings, carpet backings and many consumer paper*

*products treated with urea-formaldehyde resins, including grocery bags, waxed papers, facial tissues and paper towels.*

Formaldehyde irritates the mucous membranes of the eyes, nose, throat and respiratory system and is known to exacerbate asthma and trigger attacks. It can also cause headaches and trigger symptoms in those with MCS.

***Best formaldehyde-removing plants\*:*** bamboo palm, dracaena 'Janet Craig', mother-in-law's tongue, dracaena marginata, peace lily, green spider plant, and golden pathos.



# BENZENE

*Found in considerable amounts in tobacco smoke, commonly used as a solvent, and found in many common items such as paints, inks, oils, plastics, rubber, household cleaning products and petrol/gasoline.*

*Chronic exposure to even relatively low levels of benzene is associated with headaches, loss of appetite, drowsiness, nervousness, psychological disturbances and diseases of the blood system, including anemia and bone marrow diseases.*

*Best benzene-removing plants\*: gerbera daisy, pot mum, peace lily, bamboo palm, dracaena warneckeii, english ivy and mother-in-law's tongue.*



# TRICHLOROETHYLENE

*A widely used industrial solvent that is often found in printing inks, paints, lacquers, varnishes and adhesives.*

*Trichloroethylene is a central nervous system depressant and acts like alcohol on acute exposure causing headache, dizziness, and confusion and progressing with increasing exposure to unconsciousness. It is also known to cause liver and kidney problems with prolonged exposure and is now known to be cancer causing.*

*Best trichloroethylene-removing plants\*: gerbera daisy, dracaena marginata, peace lily (spathiphyllum), dracaena 'Janet Craig' and bamboo palm*

*\*In order of effectiveness according to the NASA/ALCA research*



Another toxic chemical found in indoor air and absorbed by certain plants is:

## CARBON MONOXIDE

Mainly produced from sources of combustion such as open fires, gas stoves, central heating boilers etc. All gas appliances in the home should be routinely checked for carbon monoxide output.

Carbon monoxide (CO) is also present in high concentrations in cigarette smoke. Low level exposure causes dizziness and headaches while more acute exposure can lead to death since CO prevents the delivery of oxygen to the body's cells.

*Best carbon monoxide-removing plants: bamboo palm, spider plant, golden pathos, dracaena janet craig, dracaena marginata, snake plant, peace lily, chrysanthemum, English ivy and heartleaf philodendron.*



# HOW MANY PLANTS ARE NEEDED?

NASA and the ALCA estimated that one 6 inch plant was needed per 100 square feet of interior space to effectively remove the chemicals above and potentially many others. This equates to only 1 or 2 plants for most rooms in an average home. It was also found, not surprisingly, that the plants are most effective at removing chemicals from the air when they are in optimal conditions for their health and growth<sup>1</sup>... so, keep your plants healthy and they will help to keep you healthy!

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# GREEN YOUR AIR!

I recommend getting an air purifier for your home (especially your bedroom) to clear out airborne toxins.

A less industrial and more decorative option includes getting the type of houseplants that act as natural air detoxifiers.

Golden Pothos, corn plants, and any of the Sansevieria genus have been used as purifiers and have gained a reputation for even being able to mitigate the effects of sick building syndrome.



*Sansevieria* absorb carbon dioxide and release oxygen at night, making them excellent bedroom plants. However, as their leaves are poisonous if ingested, they should be kept out of reach of children and pets. Pet lovers, be aware that all of these plants can be poisonous to cats and dogs if ingested by the critters, so remember to keep them away from your fur babies. (Wentz)

Likewise, watering houseplants with tap water can make them wither. yes, municipal water filtration removes most contaminants, but chlorine (or, more recently, chloramine, (which is more persistent and resists being boiled off) and fluoride, are added after filtration. Given that chlorine and fluoride are antibacterial, therefore reducing or altering the composition of the intestinal microbiota, as well as killing off soil flora when used to water plants, tap water is not a first choice.<sup>2</sup>

1. Reference: Wolverton BC Douglas WL and Bounds K (1989) [A study of interior landscape plants for indoor air pollution abatement.](#)

2. J. H. Exon, L. D. Koller, C. A. O'Reilly, and J. P. Bercz, "Immunotoxicologic Evaluation of Chlorine-Based Drinking Water Disinfectants, Sodium Hypochlorite and Monochloramine," *Toxicology* 44, no. 3 (1987): 257-69.