



Houseplant Air Quality

Research has shown that houseplants play an important role in cleaning the air we breathe, both indoors and out. Plants produce their own food (carbohydrates) through the process of photosynthesis. We've known for a long time that plants absorb carbon dioxide and release oxygen as part of the photosynthetic process. Researchers have learned that many common houseplants absorb other harmful gases as well. This research was spearheaded by NASA where they have researched methods of cleansing the atmosphere in future space stations to keep them fit for human habitation over extended periods of time.

They've found that many common houseplants and blooming potted plants help fight pollution indoors. They're reportedly able to scrub significant amounts of harmful gases out of the air during photosynthesis. The three major offenders are benzene, formaldehyde, and trichloroethylene and are commonly found in relatively new homes and offices. Many newer buildings are constructed largely with man-made building materials and furnished with synthetic carpeting, fabrics, laminated counters, plastic coated wallpaper, and other materials known to "out-gas" pollutants into the interior environment.

Newer energy efficient homes are better insulated and sealed more tightly to increase heating and cooling efficiency. While it does save both money and energy, this new found efficiency has its downside in that pollutants can be trapped indoors and have less opportunity to dissipate to the outside. If your home is old enough to be leaky and drafty, you may not need to worry about these indoor pollutants. But if you live in a newer, energy-efficient home with windows and doors tightly sealed, or you work in a building where the air feels stale and circulation seems poor, the use of houseplants is an easy way to improve indoor air quality.

Soil and roots were also found to play an important role in removing air-borne pollutants. Microorganisms in the soil become more efficient at absorbing these materials as they were exposed to them for longer periods of time. Their effectiveness is increased if lower leaves that cover the soil surface are removed, so there is as much soil contact with the air as possible.

NASA scientists studied nineteen different plant species for two years. Most of the plants tested were common houseplants that can be kept indoors year-round. These plants also evolved in tropical or sub-tropical forests, where they received light filtered through the branches of taller trees. Because of this, their leaf composition allows them to photosynthesize efficiently under relatively low light conditions, which in turn allows them to process gasses in the air efficiently.

Here is a list of the plants investigated and found to be effective at improving indoor air quality: English ivy (*Hedera helix*); spider plant (*Chlorophytum comosum*); golden pothos (*Epipremnum aureum*); peace lily (*Spathiphyllum* 'Mauna Loa'); Chinese evergreen (*Aglaonema modestum*); bamboo or reed palm (*Chamaedorea sefritzii*); snake plant (*Sansevieria trifasciata*); heartleaf philodendron (*Philodendron scandens* 'oxycardium'); selloum philodendron (*Philodendron selloum*); elephant ear philodendron (*Philodendron domesticum*); red-edged dracaena (*Dracaena marginata*); cornstalk dracaena (*Dracaena fragrans* 'Massangeana'); Janet Craig dracaena (*Dracaena deremensis* 'Janet Craig'); Warneck dracaena (*Dracaena deremensis* 'Warneckii'); and weeping fig (*Ficus benjamina*).

The NASA studies generated the recommendation that you use 15 to 18 good-sized houseplants in 6 to 8-inch diameter containers to improve air quality in an average 1,800 square foot house. The more vigorously they grow, the better job they'll do for you. As you move into the fall and winter, you may find that you have your house or workspace closed to outside air. These indoor plants will help absorb indoor pollutants and create a healthier environment.

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