

## OUTSIDE IN

Plants are a quick and easy way to change the atmosphere of a space, home or office alike.

If you work in an office environment and find the air stale or stuffy, bring some greenery into that space by placing a plant somewhere in your working environment.

This will clean the air as well as look visually pleasing.

N.A.S.A conducted research on a variety of plants to assess the capability of removing V.O.C (Volatile Organic Compounds) from the atmosphere, namely Trichloroethylene, Formaldehyde and Benzene.

Safer Solutions explains “volatile organic compounds (VOC’s), which are chemical compounds that have high enough vapour pressures under normal conditions to significantly vaporise and enter the air. VOCs that escape into the air contribute to air pollution outdoors and inside our homes.”

The report produced by N.A.S.A on “Interior Landscape Plants for Indoor Air Pollution Abatement” states that Trichloroethylene is “commonly used in metal degreasing and dry cleaning industries, but it is also used in printing inks, paints, lacquers, varnishes and adhesives.”

“Formaldehyde is a ubiquitous chemical found in virtually all indoor environments. The major sources, which have been reported and publicized, include urea-formaldehyde foam insulation (UFFI) and particle board or pressed-wood products. Consumer paper products, including grocery bags, waxed papers, facial tissues, and paper towels, are treated with urea-formaldehyde (UF) resins. Many common household cleaning agents contain formaldehyde.”

“UF resins are used as stiffeners, wrinkle resisters, water repellents, fire retardants, and adhesive binders in floor covering, carpet backing, and permanent-press clothes. Other sources of formaldehyde include cigarette smoke and heating and cooking fuels, such as natural gas and kerosene.”

“Formaldehyde irritates the mucous membranes of the eyes, nose, and throat. It is a highly reactive chemical that combines with protein and can cause allergic contact dermatitis. The most widely reported symptoms from exposure to high levels of this chemical include irritation of the upper respiratory tract and eyes and headaches. Until recently, the most serious disease attributed to formaldehyde exposure was asthma. However, the Environmental Protection Agency (EPA) has recently conducted research which indicates that formaldehyde is strongly suspected of causing a rare type of throat cancer in long-term occupants of mobile homes.”

“Benzene is a very commonly used solvent and is also present in many basic items including gasoline, inks, oils, paints plastics, and rubber. In addition, it is used in the manufacture of detergents, explosives, pharmaceuticals, and dyes.”

“Benzene has long been known to irritate the skin and eyes. Furthermore, it has been shown to be mutagenic to bacterial cell cultures and has shown embryo toxic activity and carcinogenicity in some tests. Evidence also exists that benzene may be a contributing factor to chromosomal aberrations and leukaemia in humans. Repeated skin contact with benzene causes drying, inflammation, blistering, and dermatitis. Acute inhalation of high levels of benzene has been reported to cause dizziness, weakness, euphoria, headache, nausea, blurred vision, respiratory diseases, tremors, irregular heartbeat, liver and kidney damage, paralysis, and unconsciousness. In animal tests, inhalation of benzene led to

cataract formation and diseases of the blood and lymphatic systems. Chronic exposure to even relatively low levels causes headaches, loss of appetite, drowsiness, nervousness, psychological disturbances, and diseases of the blood system, including anaemia and bone marrow disease.”

While I admit the contributions that these V.O.C's make to our health is terrible, all is not lost. You can do something about it. You may not be in a position to use paints or products with little to no V.O.C's; however, you can bring in plants and lots of them if possible. Just remember to take the plants outdoors for fresh air and good deep watering according to the care instructions.

Plants included in the testing were:

- Bamboo palm (Chamaedorea seifritzii)
- Chinese evergreen (Aglaonema modestum)
- English ivy (Hedera Helix)
- Ficus (Ficus Benjamina)
- Gerbera daisy (Gerbera Jamesonii)
- Janet Craig (Dracaena Deremensis)
- Marginata (Dracaena Marginata)
- Mass cane or Corn cane (Dracaena Massangeana)
- Mother-in-law's tongue (Sansevieria Laurentii)
- Peace lily (Spathiphyllum “Mauna Loa”)
- Pot mum (Chrysanthemum Morifolium)
- Warneckeï (Dracaena Deremensis “Warneckeï”)

The Peace Lily, Bamboo Palm, Warneckeï, Gerbera Daisy, Marginata, Pot Mom, Janet Craig and Mother-in-law's Tongue generally rating the highest across all areas.

Bring the outside in!

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