Green Up Your Office! Plants To Improve Indoor Air Quality

Botanical name: *Epipremnum* – or – Common Name: *Pothos*
Marble / Variegated / Golden / Pearls & Jade / Jade



The Pothos plant group tops many lists, including those of NASA, as a reliable easy-care plant, beneficial for air quality in our homes, offices, workspaces, colleges, and schools – not to mention, international space stations! It has minimal requirements, and its efficiency as an indoor air cleaner is truly remarkable. Tough and adaptable, Pothos can grow horizontally on surfaces or vertically from hanging planters, does best indoors in the northeast, and can thrive in a variety of light conditions with the exception only of constant sun. It can grow either in water or in well-drained soil. It creates a healthier indoor environment.

What can a plant like Pothos actually do?

"In addition to basic photosynthesis that removes carbon dioxide and returns oxygen to the air, plants can remove toxicants from air, soil, and water in at least two ways. First, they metabolize some toxic chemicals, releasing harmless by-products, and second, they can incorporate toxicants such as heavy metals into plant tissues, thus sequestering them." This research is found at the National Institutes of Health, via Environmental Health Perspectives, at U.S. National Library of Medicine.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3230460/

Modern day homes and workspaces contain pollutants that can cause health issues. Chemicals in furniture, floor coverings, paints, detergents, air fresheners, and household cleaners all exist indoors – surprisingly, even in places with good airflow! "Indoor air … with modern synthetic materials and temperature regulation … contains pollutants and is often well below recommended humidity levels." https://www.perrywood.co.uk/gardening-tips/top-ten-house-plants-that-literally-clean-the-air/



”Indoor air pollution is ranked as one of the world's greatest public health risks (Wolverton, 1997). United Nations Development Program estimated in 1998 over 2 million humans die each year due to the persistence of deleterious indoor air (Brennan and Withgott, 2005). It has also been estimated that globally 14 times as many deaths occur from poor indoor air quality compared with ambient air pollution (Brennan and Withgott, 2005).”

https://journals.ashs.org/horttech/view/journals/horttech/19/2/article-p286.xml (© 2019-2020 American Society for Horticultural Science)
Wolverton, B.C. & Wolverton, J.D. 1993, Plants and soil micro-organisms: Removal of formaldehyde, xylene, and ammonia from the indoor environment *J. Mississippi Acad. Sci.* 38 2 11 15

Major research has been seen in Scotland, England, India, Thailand, Australia and China. In the U.S., 2019 research at the federal government’s National Institute for Environmental Health Sciences (NIEHS), a group of scientists lead by Dr. Stuart Stand, “… developed a houseplant that can remove chloroform and benzene from the air around it. Benzene in the home can originate from outside air, fuel storage in attached garages, and tobacco smoke. Chloroform can be released into the air in small amounts from water during showering.”
“The researchers genetically modified a common houseplant, Pothos, to express a protein called 2E1 that transforms these [volatile] compounds into molecules the plants can use to support their own growth.”

https://www.niehs.nih.gov/research/supported/sep/2019/new-houseplant/index.cfm



Why is indoor air so important to our health?

We all spend a great deal of our life indoors, whether we recognize this or not. In-depth studies in the 1990’s showed 87% of North Americans spend most of each day indoors; subsequent newer research in Europe says 90% of Europeans do so too!

https://www.buildinggreen.com/blog/we-spend-90-our-time-indoors-says-who
https://ohsonline.com/articles/2019/09/19/breathe-cleanly-steps-to-purify-the-air-in-your-home.aspx
https://www.eea.europa.eu/signals/signals-2013/articles/indoor-air-quality

Fortunately, indoor plants such as Pothos (and others) filter, sequester and remediate harmful chemicals to clear and refresh air naturally, also raising humidity; meantime enlivening the spaces we work or go to school in, as well as at home.



Even in this one plant group, diversity of color, leaf shape and mature size of the plants affords the opportunity to add aesthetic value to your indoor workspace. Most cultivated varieties are easy to share and propagate; even youngsters, and busy college students and staff people can start and care for these plants.

Please see additional BCC Green Team flyers for more details on science and research. They are: BCC-Green-Team---GreenUpYourWorkspace---Care-For-Your-Indoor-Plants--Info-Sheet--2---2021-version-5b, and Air Purifying Capabilities of Indoor Plants--peer reviewed research ---07 17 2021---BCC-Green-Team--update---5b-.



Green Team's **Green Up Your Office – and – Green Up Your Workspace** – Berkshire Community College – hopes to add its own kind of "new improvement" to renovations on campus. Every positive action with sustainability in mind, no matter how small it may seem, can make the air we all breathe -and our environment- that much healthier.

Several B.C.C. community members both on campus and off campus are growing these plants now since 2019, and more are available. The next two plant species people have requested most often are Peace Lilies (Spathiphyllum cochlearispathum or Spathiphyllum montanum) and Spider plants (Chlorophytum comosum). If you have plants that need dividing and would like to trade or donate them to Green Team, please get in contact.

To sign up to receive your own plant cuttings, and to learn more about future phases for "Green Up", please e-mail to: roberta_hayes@student.berkshirecc.edu.

Thank you for your participation in this Green Team Project at Berkshire Community College.
