

Dracaena spp. - Many species and cultivars, including corn plant, lucky bamboo, Madagascar dragon tree, and gold dust. Most are tall (3 to 10 ft.) and upright with long spiky or arching leaves. Many are variegated. Can be cut back to control size, sprouting new foliage just below the cut. Medium light. Most prefer cooler temperatures at night.

English Ivy (*Hedera helix*) - Vigorous trailing vine with lobed evergreen leaves. Pinch back frequently for a fuller plant (some newer cultivars self-branch). Cut back hard if stems become woody. Medium to bright light. Cool temperatures help keep plant bushy. Leaves can irritate skin.

Golden Pothos (*Epipremnum aureum*) - Also called Devil's Ivy. Trailing vine with large heart-shaped leaves mottled yellow. (Other pothos varieties may be variegated with other colors). Low to medium light. Sap may cause rash.

Palms - Many species, some long-lived. Leaves or fronds can be fan-shaped or feathery and give the home a tropical look. May be clumping or single stemmed. Palms grow only from the tip so never cut off the top of a single-stemmed variety. Many do well when pot-bound. Rotate pot to keep symmetrical. A few to consider:

- **Areca palm (*Dypsis lutescens*)** - Grows to 6-7 ft. Feathery arching fronds. Clumping.
- **Bamboo or Reed palm (*Chamaedorea seifrizii*)** - Grows to 6-12 ft. Upright and open with clustered stems. Likes bright indirect light but will adapt to lower light.
- **Lady palm (*Rhapis excelsa*)** - Grows to 6-8 ft. Glossy dark-green fan-shaped leaves.

Peace Lily (*Spathiphyllum* spp.) - Cultivars available in a variety of sizes (6 in to 5 ft.). Glossy dark-green long pointed leaves form a vase-shaped rosette. White "flowers" are actually bracts surrounding the tiny true flow-

ers. Will grow in any light but needs brighter light to flower.

Philodendron spp. - Available in a variety of sizes and growth habits. Can be vining, clumping, or upright and grow 1 to 10 ft. tall and 1 to 8 ft. wide. Varieties include tree and red-leaf (both upright) and velvet-leaf and heart-leaf (both trailing). Some variegated. Medium light.

Snake Plant (*Sansevieria trifasciata*) - Also called Mother-in-law's Tongue. Many cultivars, grows 6 in to 4 ft. tall and 1 to 3 ft. wide. Succulent with erect strap-shaped leathery leaves banded light and dark green. Fragrant greenish flowers with enough light. Releases oxygen at night. Few problems. Average to warm temperatures and drier soil. Prefers bright indirect light but tolerates low.

Spider Plant (*Chlorophytum comosum*) - 1 ft. tall and 2 ft. wide. Long narrow arching leaves can be solid green or striped with yellow or white. Produces stolons up to 6 ft. long with plantlets at the tips (these can be rooted). Dense roots can fill the pot; watering from below may be easier. Bright indirect light. Prefers cool temperatures but will tolerate average.

Weeping Fig (*Ficus benjamina*) - Height to 10 ft. but may be taller. Dwarf varieties available. Arching branches with long leaves. Some varieties variegated. May lose most of its leaves if disturbed but will recover quickly. Sap can be irritating. Medium to high light.

While houseplants may not be the miracle workers they are sometimes claimed to be, they do remove some toxins and add humidity to the air. They have many other benefits and make your home a more inviting and relaxing place. Enjoy your houseplants while looking for other methods to reduce air-borne contaminants.

For more information on gardening please visit:
<https://extension.illinois.edu/global/horticulture>
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Can Houseplants Really Clean Your Air?



Garden Tips from Knox County Master Gardeners & Master Naturalists

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We often hear that the right houseplants in the home can rid the air of harmful toxins. What exactly do houseplants do and can they really make a difference in indoor air quality?

What is the Problem?

Air quality in our homes and office buildings has become more of an issue in recent years. New construction is more tightly sealed to improve heating and cooling efficiency. The increased use of air conditioning means buildings receive less outdoor air circulation in summer months. Reduced natural air exchange traps pollutants inside the home.

At the same time, the use of synthetic chemicals in building materials and furnishings has increased. VOCs (volatile organic compounds) and other chemicals release gases into the air over time (referred to as outgassing). These chemicals, such as formaldehyde, benzene, trichloroethylene (TCE), toluene, ozone, acetone, ammonia, and many others are found in building materials, furniture, carpet, fabrics, clothing, paints, solvents, glues, and many other items.

Gases are also given off by stoves and other appliances and by electronic devices. Use of cleaning products and other household products can also contribute to indoor pollution, as can tobacco smoke and scented products.

Another important component of indoor air pollution is particulate or solid matter, such as dust, pollen, mold spores, bacteria, skin cells, and pet dander.

Without adequate ventilation, gases can build up and cause health problems, both short and long term, or aggravate existing conditions.

Although outdoor air pollution is a serious problem in some locations, in others indoor air has been found to be far more polluted

than outdoor air. We can spend up to 90% of our time indoors, especially in winter.

What Do Plants Do?

During the process of photosynthesis (which occurs during the presence of light) plants take in carbon dioxide and release oxygen. It has been found that plants are also able to absorb many other toxic gases and convert them to less harmful substances through metabolic processes or the action of soil microorganisms.

In the 1980s NASA did a study to explore the use of plants to reduce harmful gases in the space station and other sealed environments. The results were promising, reducing the level of pollutant up to 90% in 24 hours.

Plants also collect some of the particulate matter on their leaves with finer particulates absorbed into the waxy layer of the leaf.

Do Plants Really Work in the Real World?

Some have suggested that the results of the NASA study don't necessarily apply in other environments. In the NASA studies the plants were in a small airtight chamber, activated charcoal was added to the soil, air was circulated with a fan, and there was a one-time injection of a single pollutant rather than the continuous release of a wide variety of chemicals found in a typical indoor environment. Homes and offices are a far more complicated environment. Even in a tightly sealed building there is some mixing of air.

Studies attempting to determine the effect of plants in real-world environments (typically office buildings) have had mixed results. Some have shown a small effect while others have shown little impact. Estimates of the number of plants required to have a significant impact on a room have been far greater than the 1 to 3 plants per 100 square feet recommended from the NASA study. Research is continuing.

So What Should I Do?

Experts do not question the fact that houseplants can remove toxins from the air. The issue is whether they can make a significant difference in indoor air quality. Don't rely on plants as a total solution to poor indoor air quality. It's much more effective to try to limit the toxins that are in your air in the first place. As much as possible, try to limit synthetic chemicals in the furnishings and other materials you bring into your home and use VOC-free paint. Vent stoves and other appliances. Try to use strong cleaners only when necessary and use vinegar or other gentle cleansers for smaller jobs. If outdoor air quality is not an issue and you don't have allergies, open windows when possible.

That being said, adding a few houseplants to your home can't do any harm and may help a bit and houseplants have many other benefits. Bringing a bit of the outdoors inside is decorative and helps make a house a home. Plants add humidity to dry indoor air. They have a calming effect and can reduce stress and even lower blood pressure. Plants have also been shown to increase productivity and satisfaction and to reduce noise in workplaces.

Things to Keep in Mind

In order to remove the greatest amount of toxins plants should be healthy and actively growing. Consider light, water, and humidity requirements when choosing plants. Water and fertilize as needed. Keep plants free of pests and diseases. Plants with a larger leaf surface may be more effective at removing pollutants. Dust or wipe leaves occasionally to help the plant more efficiently exchange gases and remove particulate matter. However, don't use "shine" products on leaves as these can clog the pores. Keeping soil

uncovered and removing lower leaves may help enhance the activity of soil organisms. You can find other tips on growing houseplants in the brochure *Houseplants*.

Use care selecting plants if you have pets or children - some can be toxic. Some plants can irritate sensitive individuals or aggravate allergies. Avoid flowering plants if you have a pollen allergy.

Suggested Plants

These plants have been shown to remove pollutants, are relatively easy to grow and are adapted to most typical home conditions. However, not all plants have been studied, so other plants may have similar effectiveness, as well as providing all the other benefits of indoor plants.

Always research plants and follow the instructions for specific requirements or care. Most plants require less water and little or no fertilization in winter. Many do best if allowed to dry out between waterings. Keep plants out of drafts if possible. Many variegated varieties show best color in brighter light (but too much light may wash out the color). Many of these plants have numerous varieties available in different colors and sizes, so you should be able to find just the right plant for your home.

Aloe vera - 1 to 2 ft. tall and wide. Stemless succulent with rosettes of spiky green leaves. Likes bright light, drier soil, and average to hot temperatures. Sap has soothing properties.

Chinese Evergreen (*Aglaonema* spp.) - 1 to 3 ft. tall and wide. Upright vase-shaped plant with thick stems and long narrow leathery leaves, often silver mottled. Occasionally produces insignificant flowers followed by bright red berries. Easy to grow in low to medium light and average to high humidity. Sap may be irritating.