

# 淨化空氣的植物

## Air-purifying Plants

有些植物品種能去除空氣中的塵埃、揮發性有機化合物(VOC)、有害粒子、微生物和黴菌孢子，亦可消除異味，從而淨化空氣，也能綠化環境。淨化空氣植物可改善空氣質素，提升我們的生理、心理健康，在家居和辦公室，均常見其蹤影。



Some plant species are capable of purifying the air by removing airborne dust, volatile organic compounds (VOCs), harmful particles, micro-organisms and mold spores, as well as getting rid of unpleasant odour and also add to the greenery of the environment. These beneficial functions of air-purifying plants make them a popular addition to households and offices, leading to improved air quality which is vital to both our physical and mental well-being.



# 淨化空氣植物的特徵 Characteristics of Air-purifying Plants



大岩桐  
*Sinningia speciosa*  
(Gloxinia)

## (i) 高滯塵能力 High dust-capturing capacity

城市綠化植物能移除空中的粒子，淨化空氣。粒子會滯留在葉片上，然後被雨水沖走。至於室內植物，澆水和直接清洗葉片都能去除滯留的粒子。



長壽花  
*Kalanchoe blossfeldiana*  
(Kalanchoe)



白網紋草  
*Fittonia verschoffeltii* var.  
*Argyroneura* (Nerve Plant)

植物的滯塵能力取決於多項因素，包括植株高度、冠層結構和葉片特徵。此外，植物的微形態特徵，如表皮細胞、蠟質和凹陷的氣孔等，亦有助捕集粒子，對抗空氣污染。植物於室內或室外均能發揮這種功能。

Urban greening plants clean up the air by removing airborne particles. Their leaves capture the particles, which are in turn washed off by rain. For indoor plants, watering and cleaning the leaves directly will rid them of any captured particles.



非洲紫羅蘭  
*Saintpaulia ionantha*  
(African Violet)



鐵十字海棠  
*Begonia masoniana*  
(Iron Cross Begonia)

Their dust-capturing capacity depends on a number of factors including plant height, canopy structure and leaf traits. The micro-morphological features of the plants such as epidermal cells, wax and sunken stomata also aid in capturing particles and combatting air pollution. This dust-capturing quality enables the plants to purify air indoors as well as outdoors.



紅皺葉椒草  
*Peperomia caperata*  
(Peperomia 'Autum leaf')



粉點草  
*Hypoestes sanguinolenta*  
(Dot Plant)



小葉欖仁  
*Terminalia mantaly*  
(Madagascar almond)



菊花  
*Dendranthema morifolium*  
(Common Chrysanthemum)



黃槿  
*Hibiscus tiliaceus*  
(Cuban Bast)



薜荔  
*Ficus pumila*  
(Creeping Fig)



鐵線蕨  
*Adiantum capillus-veneris*  
(Venus-hair Fern)



夾竹桃  
*Nerium oleander*  
(Oleander)



紅芽赤楠  
*Syzygium campanulatum*



彩虹竹蕉  
*Dracaena marginata* 'Tricolor'  
(Tricolor Dragon Tree)



羅漢松  
*Podocarpus macrophyllus*  
(Podocarpus)

# 淨化空氣植物的特徵

## Characteristics of Air-purifying Plants

### (ii) 有效過濾空氣中的有害化學物質 High efficiency in filtering harmful chemicals from the air

植物能夠吸收空氣中某些常見的揮發性有機物質及其他有害化學物質，從而淨化空氣。植物與土中根系的微生物構成自我調節的生物系統，能把吸入的化學物移至根區，分解為無害的有機副產物。

Plants can purify the air by absorbing certain volatile organic substances and other harmful chemical substances commonly found in the air. Plants and micro-organisms in the root system in the soil form a self-regulating biological system in which harmful chemicals are absorbed by the leaves, translocated to the root zone and decomposed into harmless organic by-products.



蘆薈  
*Aloe vera*  
(Aloe)



白掌  
*Spathiphyllum floribundum*  
(Peace Lily)



印度榕  
*Ficus elastica*  
(Rubber Plant)

#### 常見室內揮發性有機化合物及其來源 Common Indoor VOCs and their Sources

揮發性有機化合物 VOCs	來源 Sources
三氯乙烯 Tri-chloroethylene	 溶劑、油墨、油漆、亮漆、黏合劑、圖文傳真機、電腦終端機、打印機、油漆清除劑 Solvents, printing inks, paints, lacquers, adhesives, fax machines, computer terminals, printers, paint removers
甲醛 Formaldehyde	 硬木夾板、黏合劑、油漆、塑料、地氈、天花瓦及壁板、鑲木地板 Hardwood plywood, adhesives, paints, plastics, carpeting, ceiling tiles and panels, parquet flooring
苯 Benzene	 二手煙、油墨、圖文傳真機、電腦終端機、打印機、地氈、地磚黏合劑、塑料、合成纖維 Second-hand tobacco smoking, paints, fax machines, computer terminals, printers, carpets, floor tile adhesives, plastics, synthetic fibres
二甲苯 Xylene	 溶劑、染料、殺蟲劑、牆紙、油脂溶劑、油漆、地氈黏合劑 Solvents, dyes, insecticides, wallpaper, grease solvents, paints, carpet adhesives



資料來源：香港特別行政區政府室內空氣質素管理小組，《辦公室及公眾場所室內空氣質素管理指引》（2003年）。  
Source: Guidance Notes for the Management of Indoor Air Quality in Offices and Public Places, Indoor Air Quality Management Group, the Government of the Hong Kong Special Administrative Region (2003).



非洲菊  
*Gerbera hybrida*  
(Gerbera)



粗肋草  
*Aglonema sp.*  
(Aglonema)



常春藤  
*Hedera helix*  
'Ingelise' (Ivy)



中斑吊蘭  
*Chlorophytum comosum*  
'Vittatum' (Spider Plant)



杜鵑  
*Rhododendron sp.* (Azalea)



傘樹  
*Schefflera actinophylla*  
(Umbrella Plant)



白斑垂榕  
*Ficus benjamina*  
'Variegata' (Weeping Fig)



波士頓腎蕨  
*Nephrolepis exaltata*  
(Boston Fern)



黃金葛  
*Epipremnum aureum*  
(Golden Pothos)



巴西鐵樹  
*Dracaena fragrans*  
'Massangeana' (Corn Plant)



虎尾蘭  
*Sansevieria trifasciata*  
(Snake Plant)



白千層  
*Melaleuca quinquenervia*  
(Paper-bark Tree)

# 淨化空氣植物的特徵

## Characteristics of Air-purifying Plants

### (iii) 降低空氣中的二氧化碳濃度

#### Lowering carbon dioxide concentration in the air

植物原產於炎熱乾旱地帶，為減少水分流失，會避免在日間打開氣孔，改為進行「景天酸代謝」，只於夜間打開氣孔，把吸取的二氧化碳以酸的形式儲存，到了日間才用作進行光合作用。這種求生機制有助降低夜間的二氧化碳水平。

另外，有些植物即使在二氧化碳濃度低的環境中，其淨光合作用率仍然維持正值，持續移除空氣中的二氧化碳，淨化空氣的效能甚高。

Plants, which are native to hot and arid places, however, avoid opening their stomata in daytime to minimise water loss. They go through an alternative pathway called “Crassulacean Acid Metabolism”(CAM), in which their stomata open only at night for carbon dioxide. The carbon dioxide taken in will be stored as an acid, and be utilised to perform photosynthesis during the day. Their survival mechanism helps lower carbon dioxide concentration at night.

Besides, certain plants, even at a low atmospheric carbon dioxide concentration, manage to maintain a positive net photosynthesis and keep taking in carbon dioxide from the air. This makes them highly effective air-purifiers.



袖珍椰子  
*Chamaedorea elegans*  
(Parlour Palm)



蝦蟆秋海棠  
*Begonia rex*  
(Rex Begonia)



變葉木  
*Codiaeum variegatum*  
(Croton)



綉球  
*Hydrangea macrophylla*  
(Hydrangea)



空氣草  
*Tillandsia sp.*  
(Air Plant)



馬拉巴栗  
*Pachira macrocarpa*  
(Malabar Chestnut)



聖誕花  
*Euphorbia pulcherrima*  
(Poinsettia)



冰水花  
*Pilea cadieri*  
(Aluminum Plant)



印度榕  
*Ficus elastica*  
'Decora Burgunda'  
(Rubber Plant)



心葉蔓綠絨  
*Philodendron scandens oxycardium*  
(Heartleaf Philodendron)



仙人掌及肉質植物  
Cactus and Succulent



龜背芋  
*Monstera deliciosa*  
(Sweet Cheese Plant)



擎天鳳梨  
*Guzmania sp.*  
(Guzmania)



檸檬千年木  
*Dracaena deremensis*  
'Lemon Lime' (Dracaena)



白掌  
*Spathiphyllum floribundum*  
(Peace Lily)

# 淨化空氣植物的特徵

## Characteristics of Air-purifying Plants

### (iv) 抑制微生物和黴菌孢子生長

#### Suppressing micro-organisms and mold spores

植物葉片釋放的揮發性植物化合物能有效抑制周圍空氣中的微生物和黴菌孢子生長。

Volatile phytochemicals released by plant leaves play an important role in suppressing airborne micro-organisms and mold spores in the surrounding environment.



天竺葵  
*Pelargonium hortorum*  
(Geranium)



含笑  
*Michelia figo*  
(Banana Shrub)



檸檬  
*Citrus limon*  
(Lemon)



風信子  
*Hyacinthus orientalis*  
(Hyacinthus)



桂花  
*Osmanthus fragrans*  
(Kwai-fah)



米仔蘭  
*Aglaiia odorata*  
(Chinese Perfume Plant)



到手香  
*Plectranthus amboinicus*  
(Indian Borage)



茉莉  
*Jasminum sambac*  
(Arabian Jasmine)



迷迭香  
*Rosmarinus officinalis*  
(Rosemary)



白蘭  
*Michelia x alba*  
(White Jade Orchid Tree)



月季  
*Rosa chinensis*  
(Chinese Rose)

# 淨化空氣植物的特徵

## Characteristics of Air-purifying Plants

### (v) 增加濕度和降溫 Increasing humidity and lowering air temperature

植物進行蒸騰作用時，葉片把水蒸氣釋放到空氣中，有助增加濕度及吸收熱量，從而降低氣溫，有冷卻環境的效果。

During transpiration, water vapour released from leaves into the air helps increase the humidity and absorb heat. This in turn helps lower the air temperature and produces a cooling effect on the environment.

### (vi) 釋放有利人體健康的負離子 Releasing healthy negative ions into the air

室內植物把負離子釋放到空氣中，形成微氣候，有利人體健康。

Indoor plants can create a microclimate beneficial to our health by releasing negative ions into the air.



冰水花  
*Pilea cadieri*  
(Aluminium Plant)



雀巢蕨  
*Asplenium nidus*  
(Bird's-nest Fern)



白蝴蝶合果芋  
*Syngonium podophyllum*  
'White Butterfly' (Arrowhead vine)



龜背芋  
*Monstera deliciosa*  
(Sweet Cheese Plant)



仙客來  
*Cyclamen persicum*  
(Cyclamen)



紅掌  
*Anthurium sp.*  
(Flamingo Flower)



白掌  
*Spathiphyllum floribundum*  
(Peace Lily)



非洲紫羅蘭  
*Saintpaulia ionantha*  
(African Violet)



黑葉觀音蓮  
*Alocasia amazonica*  
(Kris Plant)



白網紋草  
*Fittonia verschaffeltii* var.  
*Argyroneura* (Nerve Plant)



垂榕  
*Ficus benjamina*  
(Weeping Fig)



傘樹  
*Schefflera actinophylla*  
(Umbrella Tree)



孔雀竹芋  
*Calathea makoyana*  
(Peacock Plant)



菊花  
*Dendranthema x grandiflorum*  
(Common Chrysanthemum)



粗肋草  
*Aglaoanema sp.*  
(Aglaoanema)



紅皺葉椒草  
*Peperomia caperata*  
(Peperomia 'Autum leaf')



琴葉榕  
*Ficus lyrata*  
(Fiddle-leaf Fig)



大岩桐  
*Sinningia speciosa*  
(Gloxinia)



中斑吊蘭  
*Chlorophytum comosum*  
'Vittatum' (Spider Plant)



常春藤  
*Hedera helix*  
'Ingelise' (Ivy)

# 淨化空氣植物的特徵

## Characteristics of Air-purifying Plants

### (vii) 美化環境 Beautify the environment

淨化空氣植物能夠美化環境，令室內外景觀更顯柔和，倍添綠意，既可提供屏障，也可發揮治療作用。

Air-purifying plants beautify the environment by softening both outdoor and indoor settings. They offer greenery that provides screening and has therapeutic effects.



# 淨化空氣植物吊籃製作

## Making a Hanging Basket of Air-purifying Plants

吊籃是把生長習性相同，但大小和色彩各異、形態多為懸垂式的植物一同栽植在花籃內，然後把花籃懸掛起來，成為有生命的立體園藝裝飾。要製作以淨化空氣植物為主題的吊籃，只須隨意選擇不同品種的淨化空氣植物，配以少量顯花植物，以凸顯顏色和質感的對比；配襯妥當後可把吊籃懸於光線充足之處，既可淨化空氣，又能收美化環境之效。至於護理方面，須確保吊籃的掛鉤穩固，定時澆水，並在有需要時施肥和修剪，讓植株茁壯生長，保持漂亮的外觀。

A hanging basket is a living piece of three-dimensional horticultural decoration that features an assortment of plants, usually trailers of different sizes and colours sharing similar growth habits. To make a hanging basket with air-purifying plants as the theme, simply put together various kinds of botanical air purifiers, and throw in a few flowering plants for contrasts in colour and texture. Hang the basket in a bright place, and there you have an interesting plant arrangement that both purifies the air and adds to the amenity of the surrounding. As for care and maintenance, make sure the hanging hook is firmly in place and water the plants regularly. Fertilise and prune as necessary to keep the plants in good health and appearance.

### 步驟 Steps

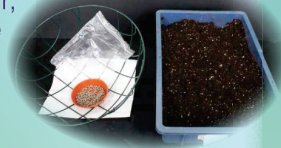
#### 1 吊籃植物的選擇 Choices of plants



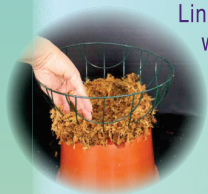
#### 2 鐵線籃及外膜材料(濕透的水苔) Wire mesh and liners (damped sphagnum moss)



#### 3 種植材料 (輕質植料、緩釋肥、膠袋) Planting materials (lightweight soil mix, slow release fertiliser, polythene bag)



#### 4 用水苔填滿吊籃的空隙 並把吊籃壓成雀巢狀



Line the wire mesh with sphagnum moss and make a nest-like basket

#### 5 放入植料及緩釋肥 Put soil mix and slow release fertiliser into the basket



#### 6 再加植料然後輕壓，使植料緊貼外膜水苔



Put in more soil mix, then gently press the soil mix

#### 7 把小苗的泥膽用膠布包裹 輕放入吊籃



Protect the root ball of the plant with polythene sheet and insert it into the basket carefully

#### 8 植入主體植物 Plant the focal plant



#### 9 加入伴邊植物 Plant other side plants



#### 10 充分澆水 Water the basket thoroughly



#### 11 五彩繽紛的吊籃 完成了 A beautiful hanging basket is made



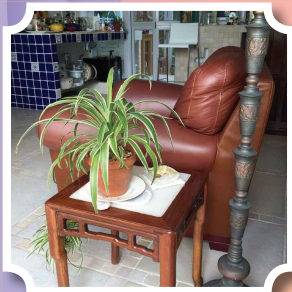


# 淨化空氣的室內植物擺設

## Display of Air-purifying Houseplants

### 家居 Household

#### 客廳 Living room



#### 睡房 Bedroom



# 淨化空氣的室內植物擺設

## Display of Air-purifying Houseplants

### 廚房 Kitchen



### 洗手間 Toilet



# 淨化空氣的室內植物擺設

## Display of Air-purifying Houseplants

### 辦公室 Office



# 淨化空氣的室內植物擺設

## Display of Air-purifying Houseplants

### 公共室內場所 Public indoor area

