

MODERN AIR PLANTS

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AIR PLANT

ESSENTIAL CARE GUIDE

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What are air plants?

Air plant is the common name for **Tillandsia**, a genus within the Bromeliad family. Another member of the Bromeliad family that you are already familiar with is the pineapple. Within the Tillandsia genus are over 700 species. When we refer to air plants, we are really talking about Tillandsias.

A QUICK LESSON ON PLANT TAXONOMY

Plants are classified into a family. Families are then broken up into divisions based on similarities and differences. These divisions are called genera. Within the genus are more subgroups called species. (There are more groups within the plant naming hierarchy, but we won't worry about those.)

The family to which air plants are classified is as follows:

Family: BROMELIAD > Genus: TILLANDSIA > Species: INCLUDES THE VARIOUS TYPES OF TILLANDSIAS, I.E. IOANTHA.

AIR PLANTS AND EPIPHYTES

The term epiphytes describes plants that live on other plants, or rocks, or whatever else they can latch onto for support, but are not parasitic—they do not take nutrients from the host plant. Epiphytes do not have typical root systems that burrow into soil to absorb nutrients.

Epiphyte is a description, not a classification. For example, although both epiphytes, air plants and orchids belong to different families. Tillandsia belong to the bromeliad family, while orchids



BROMELIAD > TILLANDSIA > IOANTHA
FAMILY > GENUS > SPECIES



are part of the orchidaceae family. Ferns and mosses are other examples of plants that are epiphytes that belong to other families.

The function of Tillandsia roots is to anchor them to a host. They do not absorb any water or other nutrients through their roots. In fact, Tillandsia roots can be cut off at the base of the plant without any harm to the plant. When you purchase a Tillandsia their roots will have already been trimmed off. Over time, the roots will begin to grow again. If you think the roots are a bit unsightly, trim them off.

TRICHOMES

Rather than roots, **air plant leaves are covered with trichomes, tiny sponge-like cells that absorb water and nutrients for the plant.** And that's not all, trichomes perform another function for the plant: sun protection. Tillandsias from more sunny climates sport more trichomes, while those from shadier locations have fewer, less visible trichomes.

XERIC AND MESIC

Tillandsias that come from harsher, dryer climates have more pronounced trichomes revealing a more silvery appearance with stiffer leaves are known as **xeric**.

Tillandsia that originate from more tropical climates are known as **mesic**. These plants are less silvery and softer to touch than xeric Tillandsia. Their trichomes are less visible and may even be microscopic.

The bottom line for you and me is that **xeric Tillandsia can handle more intense sun and are more drought tolerant, while mesic Tillandsia don't have the same high**

light requirements as do the xeric plants.

While it is useful to know which types of air plants you own, you can certainly grow both mesic and xeric varieties, no matter where you live. Also, there are some air plants that don't fall neatly into either category and are known as semi-mesic. Another Tillandsia subgroup is called hydric. These plants live in or around water and do not thrive in a home environment and aren't readily available.

CONGRATULATIONS!

Now you're a bit of a Tillandsia sleuth. Just by looking at their leaves you can determine if they are from a humid or arid climate. You understand where and how they absorb water and nutrients and that while they may be epiphytes that doesn't make them a family member to orchids and ferns, but rather to the pineapple!





HOW TO WATER AIR PLANTS

If you are wondering how to properly water air plants, you are not alone. There are a lot of misconceptions about watering air plants. This is unfortunate because these false ideas have led to many premature air plant deaths and disenchanted air plant enthusiasts. Happily, for you and your air plants, watering air plants is really quite easy.

Myth: Water in the Air is Sufficient

One common myth is that air plants get all the water they need from the air. While they do absorb water in the air, Tillandsias need more water than is available through humidity in the air. This was the false information that my sister, who first introduced me to air plants, was given.

My sister placed her air plant in a teardrop terrarium and admired its unusual, yet pleasing form. She assumed all was well and that the air plant was sufficiently hydrated enjoying the humid, coastal climate where she lived. One day she reached her hand into the terrarium

and the air plant crumbled. Make no mistake, an under-watered, neglected air plant is a dehydrated air plant.

Myth: A Wet Bed for Added Humidity

On the other extreme, just yesterday I was given an air plant from a family friend. After her air plant finished blooming she generously gave me her air plant to add to my collection. She knows that I can never have too many.

She received her air plant as part of a class at a local nursery. The instructor, the owner of the nursery, showed everyone how to wrap the end of the air plant in sphagnum moss. To keep the air plant hydrated the class members were told to soak the plant with the moss in water once a week.

The nursery owner mistakenly believed that the air plant would benefit from the added humidity that the damp moss would provide. Instead, it created an environment for rot.

Be sure to set air plants on dry medium, such as dry rocks. If the air plants are in a terrarium, the plants will do best if it is a dry, not a wet terrarium. **A terrarium with a wide opening allows for maximum ventilation.**

To care for air plants never set them on any medium that is wet, or even damp. All rocks, mosses, branches etc. that you use to display your air plants should be totally dry. Like us, air plants don't want a wet bed.

TRICHOMES

Air plants absorb moisture through their trichomes, the silvery sheen or sometimes hair-like substance on the leaves. Trichomes are like tiny sponges that absorb water for the plant, like roots do on other plants.

Tip: An air plants roots only function is to help them cling, harmlessly, to their host. These roots can be trimmed off without any harm to the plants. Over time, the roots will begin to grow again and can be trimmed off right at the base of the plant.

Water

When watering your air plants never use soft or distilled water. **Tepid tap water will work, but rain water or pond water is ideal.** I'm pretty fortunate in this regard, in exchange for a couple of tic-tac candies my son happily fills a bucket of water from the creek behind our house to water our air plants.

Tip: I collect and re-use the rain and pond water I use for soaking my air plants. After a while, the water starts to smell. The more organic material is in the water, the more quickly the water will smell. After several weeks I dump the water on my roses and begin again.

pH Meter

If you're ready to get technical, **air plants prefer their water with a pH between 5.5 and 6.0.** It can be tricky getting the pH just right, so don't give up if you have a hard time. To get an accurate reading, carefully follow the manufacturer's instructions.

Two household products can be used to adjust the pH of your water: vinegar and baking soda. If your water is too acidic, less than 5.5, add a small amount of baking soda. If your water is too alkaline, higher than 6.0 add a small amount of vinegar.

After making pH adjustments, wait until the next day to test the water. This will help you to get an accurate reading. In the meantime, if you need to water your air plants and the water isn't ready, use tap water.

From experience I can tell you to only add a little vinegar, or a little baking soda. I've way overdone it and had to start over. But, I learned, and eventually, I got it. Now, you know another reason I hang on to my rain and pond water. After fiddling with the pH, the water becomes even more precious.

After getting the pH where you want it, re-test it every so often.



3 WAYS TO WATER AIR PLANTS: MIST, DUNK & SOAK

Mist

Air plants benefit from periodic spritzing with a spray bottle. Especially if you live in an arid climate your air plants will appreciate a refreshing mist. **Keep in mind that this method should never be the sole means of watering your air plants.** The trichomes will not be able to absorb all the water they need through misting alone.

Dunk

If you are in a hurry and you know your air plants are thirsty, giving them a quick dunk will get them through the day until you can give them a proper drink. To dunk an air plant, quickly submerge the plant in water, once or several times. Alternatively, hold the plant under the faucet at the sink.

Soak

To really hydrate an air plant there is nothing like a thorough soaking. This can be accomplished by filling a bowl with tepid water deep enough to accommodate the entire plant. If you have a lot of air plants you could use a sink or even a tub.

About once a week, let your air plants soak in a water bath for about an hour. Be sure to adjust this schedule according to your climate. If it is really humid where you live, 20 minutes may be all your plants need. In dry climates, soaking up to 4 hours may be required.

A water bath is the most thorough way to water air plants.

Dry

To ensure a long and healthy life for your air plants allow them to dry properly. To dry air plants set them on their side, or up-side-down to allow excess water to drain away from the plant. You could use a towel, a colander, or a dish drying rack for the purpose.

This method for drying will prevent water from accumulating down inside the plant and rotting it. After 4 hours the plants should be dry and can be returned to their display.

The importance of allowing your plants to drain and dry cannot be overstated.

Vacation

Going on vacation? No problem. Your air plants will survive without you. **Just before hitting the road, soak your air plants for 12 hours. When you come home, soak them again for another 12 hours.** This method is ideal for a 2 week vacation. Any longer than that you will need to recruit a neighbor or friend to help you out.

Soak and Dry

Now you know how to properly water your air plants. Your air plants will not crumble in your hand with dehydration, nor will your air plants rot with over accumulated moisture. **You've got this! Soak and dry. That's it!**

Mist



Soak



Dunk



Fertilizer

Air plants are slow growing plants, but you can give yours a boost that will assist your air plants in producing pups (babies) and colorful flowers.

Fertilizer

For more growth and more flower color, as well as overall health, start fertilizing your air plants—with a light hand. Air plants can be easily burned by too much fertilizer and not all fertilizer will work for air plants. Use a fertilizer made specifically for Tillandsia. Be sure to use a non-urea nitrogen fertilizer as this type of fertilizer depends on bacteria in soil to break down the nitrogen into a usable form. Since air plants absorb their nutrients directly through trichomes on their leaves this type of fertilizer will harm air plants. Also avoid fertilizers containing boron, copper or iron, which are toxic to air plants.

Break It Down

Fertilizers contain 3 main components: nitrogen (N), phosphorus (P), and potassium (K). **Nitrogen promotes healthy leaves, phosphorus encourages flowering and potassium supports overall plant health.**

These nutrients are represented as a NPK percentage. A label reading 17-8-22 contains 17 percent nitrogen, 8 percent phosphorus, and 22 percent potassium. Recommended strength is to use 1/4 teaspoon or 1/4 strength per gallon of water, whichever is less.

ENHANCE AIR PLANT GROWTH WITH FERTILIZER

Best Fertilizer Options

When fertilizing air plants, I suggest using a fertilizer formulated specifically for Tillandsias or bromeliads. This will help you to avoid elements which are toxic to air plants, but commonly added to most fertilizers. Choose between a pre-mixed spray fertilizer or a granular fertilizer.

Spray Fertilizer

If convenience is your top priority, go with a spray fertilizer. It is the easiest option as the sure to spray all side of the plant.

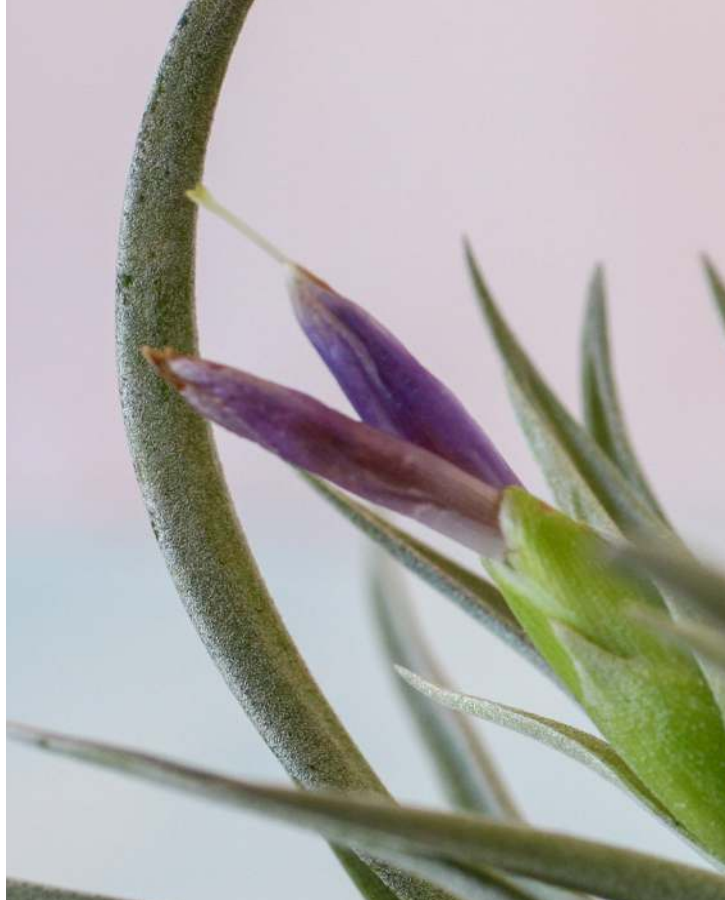
Apply spray fertilizer once a month after soaking your ai plants in water.

Granular Fertilizer

To get the most fertilizer for your money, go with a granular fertilizer. Add the prescribed ratio of fertilizer to water. To economize even more, save and re-use the water containing fertilizer. Label the water as fertilizer water, so it is not confused with other water.

Be Wise

Remember, air plants will live a long time without fertilizing, but too much fertilizer will burn or kill an air plant, judicious fertilizing, no more than once per month, will encourage growth and flowering.



TIP

To avoid fertilizer burn, fertilize once a month after watering, then monitor your plants to gauge your plants' reaction to the fertilizer.



Some people wonder: Do air plants need sun? The answer is Yes! They do! It's important to know the right-light sweet spot is for your air plants. The short answer is bright, indirect light.

Of course, that answer can be fine tuned. I'm sure you have noticed the silvery sheen or whitish fuzz on your air plants. Sometimes it is more visible on the underside of the leaf. On some air plants the sheen is highly visible, on others, not so much. **The silvery sheen or fuzz has a name: trichomes.**

Trichomes serve many purposes. **Like a sponge they absorb water for the air plant.** That's why soaking is the best way to water air plants. Soaking gives the trichomes time to reach maximum water capacity. But, trichomes are more than sponges.

Trichomes also serve as sun shields, protecting the leaves from intense sunlight. The more trichomes an air plant has the, the more sunlight it can handle. Keep in mind that our homes are much darker than the outdoors.

Give your airplants the best indirect light that your home has to offer.







You may be thinking: I know my side table is dark, but that is exactly where I want to place my air plant display. My answer is: Go right ahead and put your air plants wherever you want. This may mean that your plants won't last as long as they would have in a more sunny location. But there is an alternative.

Play musical air plants. Watering day is the perfect time to take the air plants from a darker area in your home and place them in the best spot possible. Then take the air plants from their ideal location and place them on your side table. Or, wherever makes you happy to see them. Just remember that a weekend stay in prime light is not enough to compensate for primary residence on a dark bookcase.

Because my home has wide eaves, I know my air plants will never get enough light hanging out in my living room. By playing musical air plants they can take a short turn in the less than optimal lighting without any long-term harm as long as I don't let them sit there for too many days before returning them bright, indirect light.

Remember when I said that indirect light is ideal for your air plants? Now I am going to modify that advice. A bit of direct light can actually be beneficial and can bring out more color in your plants. That said, watch for sunburn on the plant's leaves and make sure they are adequately hydrated and ventilated. Weather permitting, cracking a window will add more air circulation for your air plants.

Pull up your blinds, throw open your curtains and let in the sunshine!



Toxins

As an air plants grower, you should be aware of a few things that will compromise the health of your Tillandsia. Although these toxins are commonly found, thankfully, they are avoidable.

Copper

As harmless and pretty as copper appears, it is toxic to air plants and should be avoided. Don't use copper wire, copper plant holders or pressure treated lumber, as the chemicals to treat the wood contains copper.

Boron, Zinc and Urea-Nitrogen

Before using a particular fertilizer read the Guaranteed Analysis to see if boron, zinc or urea-nitrogen are included, as these elements are harmful to air plants.

While you want a fertilizer without boron, zinc or copper, air plants do need nitrogen. They just need it in a usable form. Look for a non-urea nitrogen fertilizer. Fertilizers containing urea depend on bacteria in soil to convert the nitrogen into a usable form for the plants. As air plants are not rooted in soil, they cannot absorb nitrogen in this form. Instead the air plant will be harmed instead of helped.

Tip: To be on the safe side, use a fertilizer specifically formulated for Tillandsias or bromeliads.

Rust

When creating displays be advised that rust is toxic to Tillandsia.

Now that you know which materials and fertilizers to avoid when caring for and displaying your air plants, you can avoid unnecessary air plant fatalities 😊

ROOT OF THE PROBLEM

Even though air plants absorb water and nutrients from their trichomes, or sponge-like cells on their leaves, they still grow roots. These roots perform a different function than the roots of most other plants. The sole purpose of these roots is to grab hold of a host plant. Air plants do not harm the host plant, they just need a good anchor. This may be a tree branch, a rock or even a telephone pole.

Air plant roots may be trimmed off without causing any harm to the plant. In fact, when you first purchase an air plant the roots will have already been trimmed off. Over time these roots will eventually begin to grow again.

Root Removal

If you don't like the look of the roots they may be easily removed. Look for a pair of scissors with long, slender tips. The type used for bonsai trees work well. Simply snip off the roots as close to the base as possible

Remove Air Plant Roots

Another reason for using long-nosed scissors is for grooming an air plant clump. Roots will inevitably grow out from the center of the sphere.



Propagation

The air plant growth cycle is so exciting because that's when we see the emergence of baby air plants from the parent plant. When an air plant flowers, it is getting ready to produce pups, or air plant babies.

Blooms

The first stage of an air plant's reproductive process is the emergence of an inflorescence. The inflorescence includes the whole flower stalk from which the flowers will eventually emerge. Some air plants produce a single flower, while others produce a cluster of blooms. Likewise some flowers are long-lasting, the xerographica's flower can last up to a year long, while others will last only a few days.

The million dollar question is how to encourage an air plant to bloom. My answer is just to give your air plant the best care you can, and hopefully, you will be rewarded with flowers and pups!

Tip: To lengthen the life of the bloom, when watering try to keep the flower out of the water.

Pups

After blooming an air plant will produce 1-3 little plantlets, or pups. Usually these little offsets can be found at the base of the plant, but they can also be found protected under dying leaves (so use caution when trimming up your plants). On some varieties pups will emerge out of the flower stalk. Once the pup is about 1/3 the size of the parent plant they can be carefully removed with sharp scissors, and you will have increased your air plant collection. If left alone the air plant will form a clump.

I've worried that because my air plant's flower was damaged, the plant wouldn't produce any pups, I was so relieved to be wrong. So, even if your flower doesn't last like you'd like, you will still probably still get pups.



In the greenhouse producing air plants from seed is a lengthy and tedious process. It takes years to grow air plants from seed. The seed must be kept damp, but not too damp as to encourage fungus. The germination process takes about a month and the first few years of growth are very slow. Once the air plant reaches about an inch in length the growth rate increases. Despite the meticulous effort, the results are worth it. Air plants grown from seed tend to be very healthy, vigorous plants.

I've never grown an air plant from seed, but if you have, I'd love to hear about it!

Enjoy the Journey

Whether or not your air plants are currently in bloom, enjoy them! That is one of the things I love about air plants, even when they are not flowering they are still beautiful. When they do flower they often reward us with pup! It's a win-win.

Clumps

Having your own air plant clump is indeed an enviable possession. That is why most air plant growers, myself included, would much prefer to leave the pups attached and allowed to clump. Most individual air plants are fairly inexpensive, but an air plant clump is a real prize.

*TIP: If you are interested in growing a clump, two varieties that clump easily are the *Tillandsia ionantha* fuego and the *Tillandsia bergeri*.*

Seeds

After flowering the air plant will also produce seeds. In their native habitat this usually occurs in the dry season so that the seeds will not be washed away by the rain. Then, when the rain does come the seeds are ready to germinate and grow.





Air Quality

You may have heard of the song by the Hollies with the lyrics: *all I need is the air that you breathe*. While it may be tempting to apply those same principles to the care of air plants, the results won't be thriving air plants. When caring for air plants in terms of air quality there are 3 considerations: **air circulation, humidity and temperature.**

Air Circulation

Air circulation is important to the health of your air plants. That's why enclosed terrariums aren't the best option for your air plants. Fans are fine as long as your air plants aren't directly in the fan's line of fire. Avoid heating and cooling vents. **Just being out in the open air of your home provides adequate air circulation for your air plants.**

Humidity

Moderate humidity levels are optimal for air plants. If you live in an arid climate, you may want to consider investing in a humidifier. Since I live in the desert, I use a humidifier. I set the humidifier to its lowest setting and refill the tank about once a week. Be careful not to crank up the humidifier to the point that you start to grow mold.

Humidity levels will also determine how often you water your air plants and for how long you soak them. If you it's humid where you live, you'll need to water less frequently than those who live in a dry climate.

Temperature

If you grow your air plants indoors, then you won't have anything to worry about. Normal home temperatures are just right for your Tillandsias. Just as you should avoid heating and cooling vents, take care that your air plants aren't too close to a cold window in the winter.

If you live in a temperate climate and want to grow air plants outdoors beware of extreme temperatures, both hot and cold. Keep your plants between 50 and 90° Fahrenheit (10-32° C).

When growing Tillandsias outdoors, keep an eye on the temperature during the summer. If it is above 90° keep your air plants well hydrated by spraying them off with the hose at least once daily. If it's hot and windy, you may need to spray them off several times a day.

Avoid freezing temperatures completely. If you've left your air plants out overnight and it frosted you'll know it because they will turn black and mushy. There is no saving an air plant if it's been nipped with frost. **Keeping air plants above 50° is recommended.**

Air Plants Are Adaptable

Use common sense and your air plants will be fine. Tillandsias can adapt to less than optimal surroundings. **The key is not to shock them with vacillating environmental conditions.** Although you may not live in a climate native to your air plants' habitat, it is most likely that they will adapt. **Do your best to provide good air quality for your air plants and success will follow.**



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