



HUMIDITY: An Introduction

Sufficient amounts of moisture in the air are vital for good gesneriad growth. The moisture in the air is measured on a scale of relative humidity ranging from 0%, i.e., air that is absolutely dry, to 100%, i.e., air that is completely saturated with water. The scale of relative humidity is a measurement devised by scientists for expressing the ratio of water vapor held in the air, in comparison to the maximum amount of water vapor the air can hold at any given temperature.

Humidity is always expressed as a percentage, e.g., a humidity of 50% means the air is only holding half of the water vapor it is capable of holding at any given temperature. Although it's relatively easy to specify and measure preferred or tolerable temperature ranges for gesneriads, it is less easy to gauge and provide for the heavily related factor of humidity.

The presence of fog, for example, indicates a relative humidity of nearly 100%; there is so much water vapour in the air that it can be seen. Mostly, though, humidity is invisible, and the relative humidity of a growing area can only be guessed at. For an accurate measurement of a growing area's relative humidity, an instrument called a hygrometer is used. These can be purchased, often in combination with thermometers, very cheaply through garden centres or drug stores. An hygrometer is an indispensable tool for gesneriad growers.

In discussing humidity and how gesneriads react to it, it is assumed that the air temperature around the plants is in the range of 60 to 80 degrees Fahrenheit.

A relative humidity of at least 40% is an absolute requirement for most gesneriads. Many gesneriads that originate in tropical rainforests need much more, however you want to stop short of raising your humidity so high that drywall and paint develop mildew and staining. A general level to aim for is somewhere between 40 to 50%.

If a gesneriad is grown in too dry an environment, transpiration (the loss of water through the leaves) will take place more rapidly than the root system can draw water into the plant tissue. As a result, a plant's leaves will lose their lustre and soon begin to shrivel and appear scorched. In addition, blooming and bud production will be stunted and severely inhibited. In general, your plants will lack vitality if grown in a dry environment. A rule of thumb is that the thinner and more papery-looking the gesneriad foliage is, the greater the likelihood that it needs extra-high humidity while gesneriads with thick, leathery leaves are more likely to withstand dry air, i.e., require less humidity.

The amount of moisture that the air must contain to maintain a given level of humidity increases as the temperature rises. For instance, the water content in the air must be roughly doubled to attain the same relative humidity at 70 degrees F as there was at 50 degrees F. In addition to temperature, light also influences the various levels of water vapor being held in the air. For instance, in situations where humidity is low, brighter lighting will help to overcome the lack of moisture in the air while in situations of high humidity, less light is required to maintain plant health.

For many gesneriad growers owning greenhouses, high humidity levels are often maintained through damping or wetting down walkways or flooring. Many greenhouse growers also use automatic humidifiers to achieve higher humidity levels. Neither of these methods are practical or particularly healthy for those people with growing areas located in their homes.

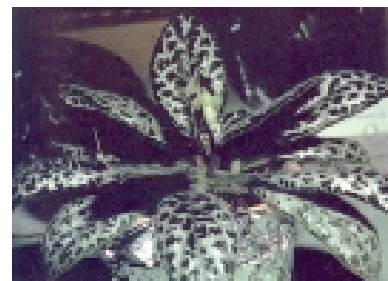
There are, however, several ways that the home grower can provide additional levels of humidity. One of these includes spraying or misting their plants one or two times daily.



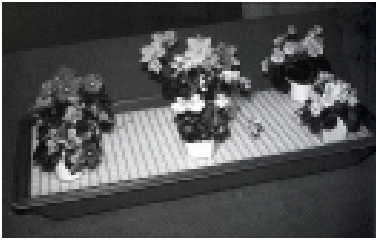
Hygrometer



A rule of thumb is that the thinner and more papery-looking the gesneriad foliage is, the greater the likelihood that it needs extra-high humidity while gesneriads with thick, leathery leaves are more likely to require less humidity.



Misting twice daily is helpful in raising humidity levels.



Placing plants on egg-crate over water-filled trays is an excellent way to increase humidity.



A water-filled dish suspended under a hanging gesneriad can provide humidity.



To improve air circulation use small portable fans.

Another and probably the easiest and best solution is to provide a constant level of water evaporation around their gesneriads. This is accomplished by placing plants on saucers in trays filled with water. In the case of large trays, commercial eggcrate can be placed over water-filled trays and the plants placed on the eggcrate.

Mat watering can also be a solution for overcoming the problem of low humidity: not only does it reduce the time spent watering plants, it instantly increases humidity levels. For some growers simply placing bowls or containers of water amongst their plants is enough to raise the humidity.

For those growers so inclined, plastic sheeting tacked in the form of a makeshift greenhouse around gesneriad growing areas can be very useful in raising humidity levels.

With increased humidity levels, air circulation amongst your gesneriads becomes an important factor and one that is crucial to the health of your collection.

There are two reasons for circulating the air surrounding your plants: one, stale air creates the perfect environment for disease organisms, e.g., mildew, botrytis, to multiply and thrive; and two, fresh air movement around plants brings fresh supplies of carbon dioxide to the leaves for use in photosynthesis. **Fresh, gently moving, warm humid air is the condition to strive for.**

The easiest way to improve air circulation in humid areas is to use small portable fans. The size of the room will determine what diameter fan should be used. For most areas, a twelve inch fan will circulate the air satisfactorily. It is important that the fan be aimed towards the ceiling or the walls, and never directly towards your plants.

Often times **air circulation**, at least in warm weather, **can be improved by simply opening a window or door located in the general vicinity of your growing area.** Since gesneriads are particularly sensitive to drafts, It is rarely advisable, except in hot weather, to open windows or doors located directly within a growing area.



REFERENCES

- Gesneriads: The Miracle Houseplants, Viriginie and George Elbert
- African Violets: Gifts from Nature, Melvin J. Robey
- How To Grow African Violets, Sunset Books, Lane Magazine & Book Company
- Growing To Show, Pauline Bartholomew
- Success With House Plants, Reader's Digest
- Growing Houseplants Under Lights, Charles M. Fitch