



Cultural Requirements of Phalaenopsis

By George Vasquez

MOTH ORCHIDS, OR PHALAENOPSIS (fail-eh-NOP-sis), are some of the most rewarding orchids for the beginner. Their cultural needs are easily met, with or without a greenhouse. Large mature plants can bloom for three months at a time and, in some cases, bloom twice a year.

Phalaenopsis species range from Asia to the Philippines to New Guinea and parts of Australia. Here the weather is constantly warm and generally provides a humid environment. Among the approximately 50 species are epiphytes (growing on trees) and lithophytes (growing on rocks).

Taxonomists divide the genus into several sections, but the two important sections are *Euphalaenopsis* and *Stauroglottis*. Members of *Euphalaenopsis* have long, arching inflorescences petals much broader than the sepals and are roundish in outline (*Phalaenopsis amabilis*, *Phalaenopsis schilleriana*). They usually flower in winter and spring. Section *Stauroglottis* is composed of species that bloom primarily in the summer. The sepals are usually as broad as the petals, and the flowers are smaller and somewhat star-shaped (*Phalaenopsis violacea*, *Phalaenopsis amboinensis*).



Hybridizers are creating new colors in all categories, including the standard –sized phalaenopsis and the miniature multifloras, the latter being characterized by masses of smaller flowers on branching inflorescences. Meeting these goals satisfies the needs of greenhouse growers, who cultivate larger plants, and the windowsill orchidist, who prefers the smaller types.

Phalaenopsis lack pseudobulbs (such as cattleyas and encyclias have) which store water and aid the plants during natural water shortages. They are monopodial and store water only in the leaves. Phalaenopsis receive a great deal of air movement and moisture in their natural habitats and respond favorably when these conditions are duplicated in cultivation.

Temperature and Humidity Although phalaenopsis will grow at temperatures between 60 F and 90 F, the optimum maximum is 68 F at night and 85 F during the day. However, plants perform reasonably well at temperatures of 64 F during the night and at warmer day temperatures.

Commercial growers realize that bottom heat is the best source of heat for plants; it warms the pots so the plants grow faster. In the greenhouse, lay inexpensive propagating mats on the benches. These heat the pots and, therefore, warm the plants to a proper temperature, without wasting energy heating the air.

Relative humidity should be 70 percent during the day and 50 percent at night. When night temperatures drop, the relative humidity increases. The easiest way to provide adequate humidity in a home is to fill a plastic or glass tray with gravel or small rocks, and maintain a layer of water in the bottom of the tray. Place the container on the gravel or stones; make sure the bottom of the pot does not touch the liquid. Water evaporating from the tray will bathe the orchid in humidity. Choose a tray approximately the diameter of the orchid's leaf spread to concentrate humidity around the plant.

Air Movement Reliable air movement prevents fungi and bacteria from settling on plants, and will also eliminate spotting of the flowers due to high humidity. Constant cross ventilation is sufficient. However, if a home or apartment must be closed – especially when one is departing for a day or two in warm weather – operate a fan constantly. In a greenhouse, it is important to have air movement 24 hours a day, because relative humidity increases as the night temperature drops and because of the area and size to be ventilated.

Light Provide phalaenopsis with approximately 1,000 foot-candles of light for superior growth. Never allow direct sunlight to reach these orchids. Smaller seedlings require more exact light conditions; strive to maintain the 1,000 foot-candle mark for them. Older and more mature plants are stronger and more tolerant of varying light intensities. Phalaenopsis can bloom and grow when exposed to light intensities ranging from as low as 800 to as high as 1,800 foot-candles. However, they do not continue to grow optimally when they are stressed, receive inadequate light or their other cultural needs are not met.

An eastern exposure is ideal for phalaenopsis on the windowsill. It is important that the plants are exposed to filtered light, but never direct sunlight. In the winter, phalaenopsis need 12 hours of light, and in the summer, 14 hours of light. If this is unavailable in the home or apartment, supplement the light source with artificial lights. Morning or afternoon light alone is inadequate for proper growth.

Watering Typical phalaenopsis grown in a pot under an average day temperature of 80 F will dry out about every five to seven days, depending on whether the vessel is clay or plastic and the type of medium used. It is important to understand that the roots of the phalaenopsis adhere to the potting medium, and the plant absorbs its water directly from the bark. Thoroughly drench the medium once a week. If the weather is extremely overcast, the medium may not dry out in that time. During the intense heat of summer, the plants can dry out a day or so earlier. Many phalaenopsis growers maintain that the roots should be kept evenly moist, with only a slight drying out time. Small seedlings in 3 and 4-inch pots dry faster, and, therefore, should be watered at shorter intervals. Adjust the watering schedule accordingly.

Water in the morning on a sunny day to allow any water that collects in the crown of the leaves to evaporate. Many beginners kill plants because too much water is left in the crown overnight; this causes crown rot. When it is absolutely necessary to water on an overcast day, be sure to examine the plants later and remove any excess water. Either tilt the plant to remove excess water or absorb the fluid with a piece of cloth or tissue.

Fertilizing Give a dilute balanced fertilizer (20-20-20 or 18-18-18) to seedlings. Once the plant has bloomed, it should receive a high-nitrogen fertilizer (30-10-10) twice a month, or approximately, at every other watering. Avoid applying high-nitrogen fertilizers to small, unflowered seedlings. Although the application of the extra nitrogen promotes faster growth, the plant will not be any stronger and it will bloom accordingly. Fertilizing at every other watering should eliminate a buildup of minerals because the regular application of plain water every other week flushes out any accumulation of fertilizer salts.

Potting Good drainage is essential regardless of the environment, medium and whether the plants are raised in container or on plaques. The majority of phalaenopsis grown in the United States by commercial houses are rooted in fir bark. Generally, small seedlings require a finer bark (1/8 to 1/4 inch) and larger mature plants a medium grade (1/2 to 5/8 inch).

Repot phalaenopsis when the plants' foliage is dry; the medium should be moist. To the bark, add a small percentage of coarse sifted peat and equal amounts of perlite (or sponge rock) and charcoal. The additives should be the same size as the bark.

Phalaenopsis potted in medium-size bark mixtures need to be repotted at 14 to 18-month intervals because the bark eventually decomposes. By then, the plant will have outgrown the pot. The better quality fir bark (clean bark without any wood in it) can last two years, and the plant will actually outgrow the pot before the bark breaks down.

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