

D & B ORCHIDS
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Growing Orchids

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Orchids, the aristocrats of the plant world, are rapidly increasing in popularity as a potted flowering plant and plant collection hobby. No longer are orchids rare and difficult to find. Increased knowledge of orchid propagation and culture have made orchids more available and affordable. No longer are orchids considered the hobby of the rich and famous.

The terrestrial *Cymbidium* orchid was cultivated by the Chinese more than 2,500 years ago. Ancient Greeks used the tubers of the *Orchis*, a European terrestrial orchid, as an aphrodisiac. Yet, orchids did not become popular as a flower and plant hobby, until the discovery of the large colorful *Cattleya* orchid flowers from the tropical new world. During the latter half of the nineteenth century, orchid growing became a mania. Their popularity demanded high prices and encouraged new discoveries. Wealthy plant collectors sent plant explorers to many exotic regions to bring back these jewels of the jungles.

The Orchidaceae is the largest plant family in the world with 600 genera and 30,000 species occurring naturally in the world and about one million hybrids growing in greenhouses and homes. The diversity of orchids and orchid habitats make growing orchids an exciting never ending challenge. Orchids grow from the edge of the Arctic Circle to the islands that rim the Antarctic. In the temperate regions, orchids are terrestrial. In the tropics, orchids are epiphytes, growing on trees, rocks or in leaf litter. Epiphytic orchid roots are covered with a spongy tissue that absorbs water and nitrogen from the air. Orchids range in size from the tiny 3 mm *Bulbophyllum minutissimum* with its 4 mm flowers to the massive *Grammatophyllum speciosum* with 5 to 10 feet pseudobulbs and a 10 foot tall inflorescence.

Increased production of orchids has made orchids available at florist, local garden centers and grocery stores. The price of orchids is reasonable enough for most budgets. Orchids are available at a reasonable price because of an increased understanding of propagation and cultural practices. Orchid seeds are tiny dust like embryos with no food

source like regular seeds. To germinate in nature, an orchid seed needs the presence of a mycorrhiza fungus to provide food. In 1899, French biologist Noel Bernard discovered that mycorrhiza fungus was necessary for germination. In 1904, German botanist Hans Burgeff discovered orchid seed would grow in agar filled test tubes inoculated with mycorrhiza fungus. In 1922, Lewis Knudson, a plant physiologist from Cornell University, discovered a way to germinate orchid seeds on an artificial medium without the use of mycorrhiza. These discoveries increased orchid hybridization. Improved hybrids have made orchids even more popular.

Conditions necessary for growing orchids are as diverse as orchid habitats. Whatever your growing conditions are like, an orchid will thrive. Light, temperature, humidity, water, fertilizer and growing media all influence the selection and culture of orchids. To select your first orchids, identify your growing conditions, like low light from a window or high light in a greenhouse. Light is the most limiting factor involved. Purchase orchids that grow in your existing conditions or be prepared to modify the conditions.

General requirements for all tropical orchids are 50 to 80 percent humidity, loose fast draining potting media, good air circulation and water with neutral or slightly lower pH and little sodium. Light and temperature requirements vary greatly depending on the natural growing conditions of the orchid. If growing indoors, select orchids that require low light. If a greenhouse is available, grow high light and low light requiring orchids by shading one end of the greenhouse for the low light requiring orchids. Supplement poor light with artificial lights or grow orchids outdoors in the summer under the correct light conditions and move the orchids indoors in the winter.

Temperature is the next most influencing factor. Orchids that grow high in the mountains require low night temperatures. During the summer, low night temperature is not possible to provide in all greenhouses or homes. Orchids are commonly divided into three temperature categories:

cool-night temperatures of 45 to 50 degrees
intermediate - night temperature of 55 to 60 degrees
warm-night temperatures of 60 to 68 degrees.

Some cool growing orchids are *Anguloa*, *Cymbidium*, *Dracula*, *Disa*, *Lycaste*, *Masdevallia*, *Miltonia*, *Odontoglossum*, *Pleurothallis* and *Sophranitis*. Some intermediate orchids are *Cattleya*, *Dendrobium*, *Oncidium*, *Paphiopedilum*, *Phragmipedium* and *Zygopetalum*. Some warm growing orchids are *Angraecum*, *Ascocenda*, *Calanthe*, *Phalaenopsis* and *Vanda*. Many of these orchid genera will grow under various conditions. Before purchasing an orchid, explain to the salesperson what your growing conditions are and ask them to advise you what to purchase.

Humidity is easy to correct by wetting greenhouse floors or using a mist system. Indoors, create a microenvironment around the orchids using an electric humidifier or placing orchids on pebbles sitting in a pan of water.

Light is influenced in a greenhouse by shading the greenhouse various degrees. In a house, light is influenced by the direction the window is facing or by artificial lights. Florescence lights, high intensity discharge lights or high pressure sodium lights are used to provide light for plants. Basements and spare rooms are often turned into indoor greenhouses using artificial light and humidifiers.

Test your water or call your water provider for a written analysis to make sure there is not too much sodium or total dissolved salts in the water. Most municipal water will be fine. Check well water. Sodium should not exceed 25 ppm and TDS should not exceed 250 ppm.

Water soluble fertilizer is used with great success. The fertilizer formula will depend on the type of media used to grow the orchids. For bark media use a high nitrogen fertilizer with a 3-1-1 ratio. For charcoal-perlite media and various rock media use a 1-1-1 ratio fertilizer.

There are four genera of orchids commonly sold in garden centers and at the florist. *Cymbidium*, *Dendrobium*, *Oncidium*, and *Phalaenopsis* are most commonly found because their flowers last a long time and they are easy to grow and flower.

Phalaenopsis, the moth orchid, is the most popular orchid because the graceful arching flower spikes will last three months. The three to four inch flowers are white, pink, yellow, striped and spotted. These orchids are easy to grow and freely flower under normal conditions in a home on a south window sill or under lights. *Phalaenopsis* flower from April through June in the northern hemisphere.

Dendrobium orchids commonly sold in garden centers have a two to three foot tall cane type growth habit with a one foot or longer flower spikes that grows from the top of the cane. *Dendrobiums* produce many 1 to 2 inch white, purple, yellow or red flowers. *Dendrobiums* flower in the fall, winter and spring. These orchids require more sun than *Phalaenopsis*. Grow *Dendrobiums* outdoors in good morning sun. Bring them indoors before the first frost.

Oncidium orchids commonly sold in garden centers have pseudobulbs (above ground bulbs) with leaves one inch wide and one foot long or longer. The yellow, gold, or

reddish one inch flowers emerge on 2 to 3 foot spikes from the base of the pseudobulb. Oncidiums make wonderful specimen plants that produce many flowers year after year. Grow Oncidiums outdoors in good morning sun. Bring indoors before the first frost.

Cymbidium orchids have a large pseudobulb with leaves one inch wide and three feet long. The leaves grow from the top of the pseudobulb. The three to four inch flowers are on a spike that is as long or longer than the foliage. The flowers come in white, red, pink and even green. The plants are usually sold with two to three spikes of flowers any time from Christmas to Mother's Day. The flowers last a long time.