

GROWING PLANTS UNDER ARTIFICIAL LIGHTS

When growing plants indoors it is often difficult to provide the proper amount of light required to maintain a happy and healthy specimen. With the onslaught of winter the days are shorter and the nights are longer limiting the amount of available natural sunlight. The intensity of the sun is also diminished at this time of year. Artificial light, however, supplies a consistent and dependable source of light year round.

Often the areas of our home or office where we wish to grow a plant do not even have a window, or, if you're like many of us, you have more houseplants than available window space. In any case, the addition of artificial lighting to replace or supplement natural sunlight is important for growing healthy, attractive houseplants and necessary to keep flowering plants in bloom during the winter months.

Color and Plant Growth

In order for a plant to grow properly the light it receives must mimic natural sunlight. Sunlight contains all the colors of the spectrum and all are necessary for the process of photosynthesis. Red and blue are two of the most important colors vital to plant growth. Red stimulates vegetative growth and flowering, However, too much red will create a leggy plant. Blue regulates plant growth for a fuller stockier plant.

With artificial lighting the color of light emitted is determined by the phosphor coating on the inside of the bulb. Cool white bulbs emit blue and yellow-green light and are a poor source of red light. Warm white bulbs emit orange and red light but are a poor source of blue and green. In a two bulb fixture you may use one of each of these bulbs to receive a wider spectrum of color necessary for healthy plant growth.



Light Intensity

Different types of plants require different light intensities. Some plants thrive in low light, others require bright light. With artificial lighting the intensity of light is determined by the bulb wattage and how close the plant is to the light source. Knowing the light requirements of your plants will benefit you greatly when determining where to place a light and which plants to group together under the fixture. As a general rule of thumb, plants that are grown for fruit and flower usually require more light than those grown strictly for their foliage. Plants under artificial light should be rotated weekly as light from tube style bulbs is more intense in the center of the bulb than at the ends. Using white trays, mirrors or trays lined with foil will help reflect light to increase the amount of light available to your plants.

Duration of Light

Most houseplants do well with about 12 to 16 hours of artificial fluorescent light a day. Too little light will result in elongated, spindly growth and too much light will cause a plant to wilt, color to fade, soil to become excessively dry and foliage to burn. Plants also require a rest period each day. Providing your plants with an 8 to 12 hour period of darkness a day will moderate plant growth rate and provide the rest necessary for setting flower buds. For example, the Christmas cactus needs 13 hours of uninterrupted darkness a day, for six weeks, in order to set flower buds. Without this required time of rest time the Christmas cactus will not flower. The use of an automatic timer is helpful in regulating the amount of time your houseplants are exposed to light and darkness.



Incandescent vs. Fluorescent

Understanding the difference between incandescent and fluorescent light will help you choose the best artificial lighting for your houseplants.

Most of the bulbs used in our home and place of business are incandescent. These bulbs are economically priced. The major drawback is that incandescent bulbs are inefficient; they require more energy to produce light than fluorescent and therefore are more expensive to use. Incandescent bulbs produce mostly red light and do not produce sufficient blue rays to meet plant needs. Incandescent bulbs also burn hot and create a dry environment, reducing humidity and potentially scorching plant leaves.

Fluorescent bulbs on the other hand are more expensive to purchase but are less expensive to use. They produce more light with less energy. A fluorescent bulb produces $2\frac{1}{2}$ to 3 times more light than an incandescent bulb of the same wattage. Whereas incandescent bulbs produce mostly red light, regular fluorescent bulbs produce mostly blue rays with an insufficient amount red needed for plant health. Fluorescent bulbs burn cool so they do not dry the air or scorch plant leaves.

One option for providing adequate light for growing houseplants is to use a two bulb fixture with one incandescent and one fluorescent bulb, this will supply the full spectrum of light required to grow both flowering and foliage plants. A better alternative is to use what is called a full-spectrum fluorescent gro-bulb. These artificial lights have all the benefits of fluorescent bulbs with the added advantage of providing the full range of colors required for plant growth all in one bulb. Full-spectrum fluorescent gro-bulbs are the best lighting choice for houseplant care.

Fixtures

When choosing a plant light fixture, the most important feature is that the fixture be adjustable. You should be able to adjust the fixture up and down to account for the growth height and varied light intensity requirements of a variety of plants. If the fixture is not adjustable you will limit the type of plants that you can grow. Simple shop lights and table-top light fixtures are both adjustable and good choices for lighting houseplants. Another consideration is the size of the fixture. Size choice is based on the number of plants that you plan to grow under the light. Lighted plant carts provide multi levels of lighted shelves on which to grow plants. Carts are on wheels which make them easy to relocate, table-top fixtures are light-weight and easily transported to other locations when necessary.

At Primex we carry everything required for healthy houseplants. Stop by our store so that we can introduce you to our selection of artificial lighting items. Our excellent greenhouse staff can provide you with information regarding the care of your houseplants or check out our Greenhouse Care Sheet from your computer at home.