



FACEBOOK LIVE SEMINAR

Using Grow Lights for Indoor Gardening

Light is one of the most important factors for growing houseplants, while many indoor plants do just fine indoors with whatever natural light comes through your windows, certain ones will bloom and grow more reliably with additional light from artificial sources. Mike Westphal guides you through the basics of artificial lighting and what you'll need to know about setting-up the best grow light systems for your houseplants and seedlings.

BENEFITS OF GROWING INDOORS

Whenever we talk about growing plants, we discuss five key factors; temperature, air, water, nutrients, and light. Growing indoors helps to:

- Limit pest issues.
- Control all five key factors (temperature, air, water, nutrients, and light).
- Control the light indoors for growing success.

USING GROW LIGHTS INDOORS

For plants to develop in a healthy manner, they need to capture and convert energy from the sun. All plants require light for photosynthesis, the process within a plant that converts light, oxygen and water into carbohydrates (energy). Supplemental lighting can make up for a lack of natural sunlight. Using grow lights enables you to grow plants indoors (houseplants, orchids, herbs, salad greens, and seed starting). By learning how plants use light and about grow light fixture options, you can select an indoor grow light system that is right for the plants you want to grow.

THREE ASPECTS OF LIGHT

There are three aspects of light to keep in mind; **quality**, **quantity**, and **duration**.

QUALITY

Quality is the intensity of the light (Kelvin or color and spectrum), which can be measured in foot candles, lumens, or lux.

Spectrum – sunlight contains the complete spectrum of light including all colors of the rainbow: red through yellow to blue and violet. Indoor plants grow best under full-spectrum bulbs, which produce a balance of cool and warm light that replicates the natural sun spectrum. Plants utilize all different colors in the spectrum to grow, however, blue and red are used the most.

- Red – flowering
- Blue – green growth (vegetative growth)

Kelvin - is the color of the light. The higher the degree of Kelvin, the bluer, or cooler the lamp appears. The lower the degree of Kelvin, the redder, or warmer it appears.

When growing most houseplants, use light between 4000 and 6000 Kelvin.

- 6,500 is closest to daylight and is great for growing plants.
- 5,000-7,000 helps promote green vegetative growth.
- 3,500-4,500 will help promote fruiting and flowering.

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QUANTITY

Quantity is the **intensity** of the light (watts and lumens together), which can be measured in foot candles, lumens, or lux.

Lumens – measure how bright the light is to the human eye and are less relevant when considering lighting for plants. Lumens do not measure some of the important wavelengths that plants need to grow. Red and blue are a lower lumen, yellow is much higher. Nowadays, bulbs are being produced with lower wattage but a high lumen output, so intensity is still good.

Watts - is the measurement or the rate at which energy is used. The higher the wattage, the higher the energy input into the bulb.

DURATION

Light duration (photoperiod) is the number of hours of light a plant needs per 24-hour period. Plants are classified by photoperiod into three categories for flowering response: short day, long day, or day-neutral.

Use a timer to provide supplemental light when growing in a location with less natural light. Use a timer to ensure plants receive the following total light hours:

- Seedlings - 16-18 hours per day.
- Hydroponic lettuce and herbs: 12-14 hours per day.
- Foliage houseplants - 12-14 hours.
- Flowering houseplants - 14-16 hours.

ARTIFICIAL LIGHT OPTIONS

There are many types of artificial light options in different styles and sizes to fit your needs and budget, just be sure you choose the right lights for the plants you want to grow. Lighting has advanced and bulbs are now being produced that keep the watts low (reducing energy costs) and lumens high (brighter light).

- **Fluorescent lights** are ideal for plants with low to medium light requirements, like African violets. They are also good for starting vegetables indoors. These lights typically come in long, tube-like bulbs in a range of sizes.
- **LED Lights (light emitting diode)** lights are extremely long lasting and economical. Some LEDs can provide both high quality and quantity of light. LED bulbs are highly efficient, producing very little heat in comparison to their brightness. LED lights typically provide full-spectrum lighting, but many can also be tailored to the specific bandwidth your plants need.
- **Incandescent** are a good option if you're only growing a few plants for a short amount of time. They are good for flowering plants, since they produce slightly more red light than blue light.

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Compared to fluorescent and LED lights, incandescent light don't produce light efficiently. They burn out quickly, so they'll need to be replaced frequently. They also don't produce enough blue light, which can inhibit healthy leaf growth.

LIGHTING ACCESSORIES:

- Nano dome
- Replacement bulbs

Here is a list of what we frequently have in inventory and their uses (as of 2.15.21):

Sunblaster T50

- Full spectrum
- 24", 36" and 48" tube lights
- Different watts by lamp size
- All 6400 kelvins
- Different lumens by bulb size
- Reflector helps spread light
- 10,000-hour use
- Light source all the way to the end
- Sunblaster grow light bulbs
- CFL bulbs – compact fluorescent lamp(or light)
- 13 watt or 26 watt (900 – 1700 lumens)
- 6400 kelvins
- Self-ballasted lamp, more output, less energy.

Agrobrite Dayspot grow light kit (60 WATT)

- Easy to use
- 6400 Kelvins
- Full spectrum

Agrobrite Desktop Plant Light

- 5400 kelvins
- 27 watt
- Height adjustment from 15" to 25"
- Full spectrum
- 1500 lumens

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