

# **MARIJUANA & ARTIFICIAL LIGHT**

## **A Frugal User's Guide**

**The setup in the light chamber (160 watts GE Daylight ULTRA 6500K fluorescent light and 100 watts 2845K incandescent light) will provide the desired effect to both vegetative and flowering marijuana. But the UVB photons supplied by the 6500K fluorescent light are not of sufficient intensity to make fully realized THC, and supplemental UVB photons from either sunlight or specialized lights will be required for that. In addition, the ballast in the two-lamp holder should be a "high power factor" standard size; the smaller, energy-saver ballast provides less luminosity. Even though the Phillips Daylight Delux 6500K fluorescent tube has lower lumens than the GE Daylight Ultra fluorescent tube, it is an okay substitute. And cheaper! Home Depot had a case of 10 Phillips Daylight Delux fluorescent tubes for \$28 in October 2005. Contrast that with the GE Daylight Ultra fluorescent tubes which sell for \$6 each!**

**Kelvin Temperature is an easy key to the efficiency of artificial light to fuel photosynthesis or to affect the phytochrome. The former is fueled very efficiently by 6500K light: this is a Kelvin Temperature the same color as the sky at noon on a clear summer day. Phytochrome, on the other hand, is very responsive to orange and red wavelengths. Because its light is saturated in these wavelengths, the ordinary household incandescent light bulb (2845K) is used as a cheap and effective way to delay flowering in short-day plants with night-interruption lighting or to trigger flowering.**

**To obtain the desired effect from the fluorescent tubes in an environment that receives no supplemental sunlight, the distance between the plant meristem and the fluorescent tubes should not be greater than 3" for seedlings and 8" for transplants in one-gallon and larger containers. In any case, the closer the better during vegetative**

**growth because of the Inverse Square Law. Any larger distances between the fluorescent tubes and the plants' meristem are related to the increase in leaf surface area as the plants mature or when the flowering photoperiods begin. Compact plants with large leaves and branching can be expected from this light setup when a high nitrogen liquid fertilizer is used during the vegetative growth cycle. The potting soil used is called "Supersoil."**

**4 mil. black plastic sheeting permanently caps the ends of the artificial light chamber. The rest of the chamber is covered with a 6' wide x 14' black poly sheeting that is unrolled from around a 2" PVC pipe. This sheeting covers the back, top, and front to exclude any other light from entering the chamber during the dark periods. Otherwise, the sheeting is rolled back around the PVC pipe until needed again. The light chamber frame is made out of corral board (1"x5"x16') that was sawn in two lengthwise (2-1/2"x16'), and assembled with wood glue and 1-3/4" deck screws.**

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