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Application of LED and Fluorescent Light Sources on Common Dandelion (*Taraxacum officinale*) and Purple Coneflower (*Echinacea purpurea*)

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Artificial light supplied by conventional lamps, such as fluorescent lamps, has been positively utilized in the last years, especially for integrating natural sunlight during the greenhouse cultivation of flowers and crops. In the last years, the interest of researchers and business have been moved on the use of light emitting diodes (LEDs) such as an innovative artificial light source. LEDs technology is appreciate to be high efficient and to have a long lifetime. Moreover, LEDs have the possibility to emit light at a specific wavelength and are able to provide precise light quality and quantity to crops. To assess the effect of different artificial light supply on photosynthesis and chlorophyll content of common dandelion (*Taraxacum officinale*) and purple coneflower (*Echinacea purpurea*), an experiment was conducted in controlled conditions using two black chambers equipped respectively with LEDs and fluorescent lamps (fluora). Plants were divided into two groups on the basis of lighting type plus a control with plants kept under natural lighting. Leaf gas exchange and chlorophyll content were recorded before, during and after the light treatments. Results pointed out both the species had a different photosynthetic response to LEDs and fluora. Negative gas exchange performances of common dandelion were recorded on both LEDs and fluora light supply. On the other hand, net assimilation, transpiration and stomatal resistance of purple coneflower were positively affected by fluora lighting. For both the species, SPAD values (correlated to chlorophyll content), after a first increase, has progressively reduced till the end of the experiment.