

EFFECTS OF SUPPLEMENTAL LIGHT EMITTING DIODE (LED) LIGHTS ON GROWTH AND YIELD OF SALAD CUCUMBER

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Light energy is an important factor for plant growth. In regions where the natural light source (solar radiation) is not sufficient for growth optimization, as an additional light source, LEDs (light-emitting diodes) are becoming popular very fast. Salad cucumber (*Cucumis sativus*) is a predominant greenhouse vegetable crop. Yield is comparatively low in seasons and regions having low light intensities due to rainy and cloudy conditions. This research was carried out to study impact of supplemental LED lighting on growth and yield of salad cucumber variety, Sakura. The experiment was carried out in greenhouse conditions. As supplemental lighting treatments, LEDs under rainy/ cloudy conditions as well as at dawn and dusk were compared with natural light in a Complete Randomized Design. LED flash lights (30 W) were arranged at the rate of 4 W m⁻² and 2.1 m above the canopy height. 36 plants were selected randomly and growth and yield parameters were determined at weekly intervals. Compared to the control, plants under LED lighting have resulted significantly higher ($p < 0.05$) number of flowers per plant, number of fruits per plants and more fresh weight of fruits due to the impact of supplemental lighting. Numbers of leaves per plant, number of stem nodes per plant and length of fruits were not significantly different among treatments. Supplemental LED lighting during crop growing period was effective in improving plant growth and yield of salad cucumber.

Keywords: Greenhouse, LED, Salad cucumber, Supplemental lighting