



## Effect of Artificial Light Supplementation and Rate of Albert Fertilizer on Growth and Yield of Salad Cucumber Grown in Automated Protected Houses

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### Abstract

An experiment was conducted from August to November 2022 in two automated protected houses at the Faculty of Agriculture, University of Ruhuna to evaluate the effect of artificial light supplementation and rate of Albert fertilizer on the growth and yield of salad cucumber (*Cucumis sativus* L. var Efdal F1). The experiment was carried out in a two-factor factorial (2 x 2) Completely Randomized Design with five replicates. The tested two factors were light: L<sub>0</sub> (without artificial lights), L<sub>1</sub> (with artificial lights), and rate of fertilizer: R<sub>1</sub> (1.5 g/plant/day), R<sub>2</sub> (2g /plant/day). Treatments were applied daily. Vine length, number of leaves, length of internodes, chlorophyll content, and dry weight of leaves were measured as growth parameters while the number of days taken for the first flowering, weight of fruits, length of fruits, and number of fruits were recorded as yield parameters. The data were analyzed using ANOVA and means were separated by least significant difference (LSD) at a 5% probability level. As revealed by the results, there is an interaction effect between artificial lights and the rate of Albert fertilizer on vine length and the number of leaves. A significantly higher vine length and a higher number of leaves were obtained from 1.5 g Albert fertilizer/ plant/ day applied with artificial lights. There is neither interaction nor main factor significant effect on the length of internodes, chlorophyll content, dry weight of leaves, number of days taken for the first flowering, and length of fruits. However, the weight of fruits and the number of fruits were significantly affected by the rate of Albert fertilizer and artificial lights. Significantly higher values for weight and number of fruits were recorded from 1.5g Albert fertilizer/ plant/ day and with artificial lights treatment. Therefore, Albert fertilizer at the rate of 1.5 g / plant/ day applied with artificial lights can be recommended for salad cucumber grown in automated protected houses.

Keywords: *Artificial Lights, Automated, Salad Cucumber.*

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