ABSTRACT

THE EFFECT OF FLUORESCENT LAMP DISTANCE ON PLANT GROWTH KAILAN (*Brassica oleraceae*) WITH WICK SYSTEM HYDROPONIC (*Wick System*) IN THE ROOM (*Indoor*)

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Fluorescent light is a lamp that can be used in hydroponics systems in the room (indoor). Distance of the lights to the plant needs to be determined carefully. The objectives of this study was to determine the effect of fluorescent lamp distance on plant growth of kailan (*Brassica oleraceae*) with wick system hydroponics in the room (*indoor*). Research used a randomized complete block (RCB). There were five treatments such as one treatment used sun exposure (N0), and four artificial lights each using a 5x36 watt fluorescent bulb. The treatments using four artificial lights in the room used different distance of light, from the bulb to the surface of planting media. The 4 treatments were 20 cm (N1), 40 cm (N2), 60 cm (N3), and 80 cm (N4). Each treatment consisted of 4 plants totaling 20 plant samples. Plants treated in the room were placed in compartments or growth chambers with the dimension of 60 cm x 60 cm x 110 cm. While plants treated out the room were placed in a greenhouse. Data of plants production was analyzed using analysis of variance, followed LSD comparision with $\alpha = 0{,}05$. The result showed that distance treatment of 20 cm from the bulb to the surface of planting media (N1) was the best among the other artificial lighting treatment based on all parameters observed such as number of leaves, plant height, leaf area, leaf area index, biomass weight with upper part and lower part. However, it was still less optimal as compared to the treatmen of sun exposure (N0).

Keywords: fluorescent lamps, kailan, indoor hydroponics, wick system hydroponics.