

## EFFECT OF DIFFERENT LIGHT QUALITY ON THE GROWTH AND YIELD OF SWEET PEPPER (*Capsicum annum* L.)

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### Executive Summary

Sweet peppers are high in antioxidant and anti-inflammatory plant compounds, including vitamin C, carotenoids, and phenolic acids. For this reason, they may have several health benefits, such as improved eye health and reduced risk of several chronic diseases. An experiment was conducted in the Horticulture farm of Sher-e-Bangla Agricultural University, Dhaka, during the period from October 2019 to April 2020, to find out the effects of color different light quality by using different shade nets on growth, yield and quality of capsicum. The experiment consisted with two factors. Factor A: Three types of color shade nets such as C<sub>N</sub> - White color shade net (control), G<sub>N</sub> - Green color shade net (25%) and B<sub>N</sub> - Black color shade net (40%). Factor B: Three varieties such as R - F<sub>1</sub> Hybrid Sweet Pepper (Lalima), G - Peperone Yolo Wonder and Y - BARI Misti morich 2. The experiment was laid out in Randomized Complete Block Design (RCBD) with three replications. Results revealed that in terms of yield and yield contributing parameters, G<sub>N</sub>R gave the highest yield plant<sup>-1</sup> (318 g) and fruit yield (34.52 ton/ha), where the lowest yield plant<sup>-1</sup> (121 g) and fruit yield (13.13 ton/ha) was recorded from the treatment combination of B<sub>N</sub>G. In terms of quality parameters, the highest (10.23%) total soluble solids (TSS) were obtained from C<sub>N</sub>R and the lowest (3.80 %) total soluble solids (TSS) was obtained from B<sub>N</sub>G. The highest Vitamin C content (164.50 mg 100g<sup>-1</sup>) was obtained from C<sub>N</sub>G, where the lowest (146.63 mg100g<sup>-1</sup>) was obtained from B<sub>N</sub>Y. The highest antioxidant activity (81.16%) and anthocyanin concentration (10.47 mg/100gFw) was obtained G<sub>N</sub>R, whereas the lowest antioxidant activity (71.75 %) and anthocyanin concentration (4.23 mg/100gFw) was obtained from B<sub>N</sub>G. Green shade net (G<sub>N</sub>) with F1 Hybrid Sweet Pepper (R) gave the best performance among all the treatment combinations.

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