

Monochromatic LEDs effect on rocket (*Eruca sativa*. Mill.) morphogenesis and productivity

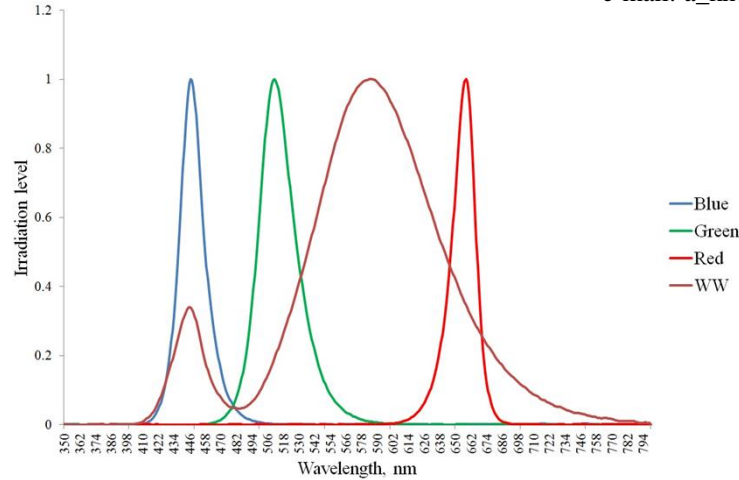
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In this research, the effects of different variants of light intensities and monochromatic light modes on rocket plant growth parameters and productivity were studied. The best results were achieved under a G2, R2, and WW3 light modes. Besides those treatments, the B2 treatment showed similar results in productivity per leaf and other parameters, which suggest the importance of higher light intensities for plants growth and development.

The fact that the higher productivity, total leaf area and dry weight content also were achieved under WW3 light mode suggests that the effect of broadband RGB spectra is of same or probably greater significance than such effect of monochromatic light modes.

The variation among the studied characteristics suggests that to better understand the effect of combination of light intensity, its spectra, and photoperiod on plant growth, it is necessary to study more features such as photosynthesis activity and biochemical characteristics.

The results of this study can be used in the agricultural industry of the northern territories and scientific research.



The properties of treatments used in the study

Treatments	Photon flux density ($\mu\text{mol m}^{-2} \text{s}^{-1}$)	Light spectral ratios	Power, W.	Peak wavelength λ_p (nm)
R1	100	R100:G0:B0	7,2	660
R2	1000	R100:G0:B0	87,2	660
R3	1400	R100:G0:B0	123,9	660
G1	100	R0:G100:B0	18,1	520
G2	1000	R0:G100:B0	296,1	520
G3	1400	R0:G100:B0	414,7	520
B1	100	R0:G0:B100	9,9	440
B2	1000	R0:G0:B100	132,9	440
B3	1400	R0:G0:B100	190,8	440
WW1	100	R38:G52:B10	15,1	580
WW2	1000	R38:G52:B10	174,3	580
WW3	1400	R38:G52:B10	242,1	580

