Effects of day length, light spectral quality and quantity on phenology and development of redroot pigweed (*Amaranthus retroflexus* L.)

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The response of *Amaranthus retroflexus* L. to different day lengths, light spectral qualities and quantities was investigated. Daylengths of 12, 14, and 16 hours were used, with two levels of red:far-red light (R:FR) ratio (0.5 and 1.0) and three levels of photosynthetic photon flux density (PPFD) (200, 500, and 1000 μmol·m⁻²·s⁻¹). The results showed that both daylength and PPFD significantly affected the growth and development of *Amaranthus retroflexus* L. The highest plant height and dry matter were obtained at a daylength of 16 hours and PPFD of 1000 μmol·m⁻²·s⁻¹.

C. Cowan et al. (1998), Dieleman et al. (1995), and P. Kenzievic et al. (1994) reported that the response of *Amaranthus retroflexus* L. to changes in daylength and PPFD was influenced by the R:FR ratio. Horak and Loughin (2000) and Weaver (1984) found that the growth and development of *Amaranthus retroflexus* L. were significantly affected by changes in daylength and PPFD.

References

Cowan et al., 1998; Dieleman et al., 1995; Kenzievic et al., 1994; Horak and Loughin, 2000; Weaver, 1984; Weaver and McWilliams, 1980.

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