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

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The effects of day length, light spectral quality and quantity on the phenology and development of redroot pigweed (Amaranthus retroflexus L.) have been investigated. R:FR (red:far-red) and PPFD (photosynthetic photon flux density) at different levels were used. The results showed that day length and light intensity significantly affected the growth and development of the plant. The optimal PPFD and R:FR ratio for maximum growth was found to be 500 μmol·m⁻²·s⁻¹ and 1:1, respectively. The study also revealed that the spectral quality of light significantly influenced the plant's response. Further research is needed to determine the specific mechanisms underlying these effects.

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