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.) were studied. Day length, light spectral quality, and light quantity were manipulated to examine their effects on the plant's growth and development.

Key findings include:
- Increasing day length and light quantity had a positive impact on plant growth.
- Light spectral quality, particularly the ratio of red to far-red light (R:FR), influenced the plant's development.
- A high R:FR (4:1) ratio promoted flowering, while a low R:FR (1:4) ratio delayed flowering.

These results highlight the importance of controlling light conditions for optimizing the growth and development of *Amaranthus retroflexus* L., which is a common weed in agricultural systems.

References:

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