

عنوان مقاله:

Impact of water deficit on critical period of pigweed (*amaranthus retroflexus* L.) in sunflower

محل انتشار:

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خلاصه مقاله:

ABSTRACT-The critical period of weed control is a part of crop life cycle during which weeds must be kept weed-free to avoid yield losses due to competition. In order to evaluate the effect of deficit irrigation on critical period of redroot pigweed (*Amaranthus retroflexus* L.) in sunflower (*Helianthus annuus* L.), an experiment was carried out as split plot based on randomized complete block design with three replications at the experimental farm of College of Agriculture, Shiraz University, during ۲۰۱۰ and ۲۰۱۱ growing seasons. Factors were water deficit at three levels (۱۰۰%, ۷۵% and ۵۰% of field capacity) as main plots and weed interference periods in weedy and weed-free plots at five sunflower growth stages (۸-leaf, ۱۲-leaf, head emergence, flowering and maturity) as subplots. Results showed that water deficit decreased grain yield and grain yield components in both years. Critical period of redroot pigweed in normal irrigation with accepting ۵% yield loss in sunflower was ۳۵-۸۶ DAP (days after planting) in the first year and ۴۹-۹۴ DAP in the second year. By decreasing irrigation water to ۷۵%FC and ۵۰%FC, the length of critical period increased to ۳۴-۱۰۰ and ۳۲-۱۰۵ DAP in the first year and ۵۰-۱۰۱ DAP and ۴۴-۹۸ DAP in the second year of the study, respectively. Generally, our results showed water deficit extended the length of critical period of redroot pigweed in sunflower. Nomenclature: Redroot pigweed, *Amaranthus retroflexus* L.; Sunflower, *Helianthus annuus* L.

کلمات کلیدی:

Keywords: Critical period of weed control, Acceptable yield loss, Gompertz model, Logistic model

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