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Determination of the critical period of weed control in cotton fields (*Gossypium hirsutum* L.)

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ABSTRACT

In order to determine the critical period of weed control in cotton, an experiment was carried out at Varamin Research Center during years 2000-2001. The experiment was conducted in randomized complete block design with 14 treatments and 4 replications, applied in two series. In the first series, weeds competed with cotton at different phenological stages of cotton (production of 1 and 5th true leaf stage, 1, 3 and 5th reproductive branches and production of brown flower) and during the growing period as check treatment. In the second series, weeds were controlled as above-mentioned stages and during the growing period as check treatment. Results showed that the height of cotton plant, number and length of branches, number of bolls and cotton yield were affected by weed competition. The critical period of weed control began from production of the first reproductive branch and continued up to production of brown flower on cotton plants in the first year of experiment. The critical period began sooner due to drought stress in second year and started when the 5th leaves appeared. *Amaranthus retroflexus* L., *A. viridis* L., *A. blitoides* S.Watson, *Portulaca oleracea* L., *Echinochloa crus-galli* (L.) P.Beauv., *Cyperus rotundus* L., *Sorghum halepense* (L.) Pers were the most dominant weeds in experimental location.

Key words: cotton, weed control, critical period, gampertz and logestic equations.

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