

## Determination of Critical Period for Weed Control in the Second Crop Forage Maize (454 Cultivar)

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**Abstract :** Weeds control based on their critical period leads to less production costs and risks of wide chemical application of weeds control methods. The present study considered effect of weeds control time (weeds interference after 20, 40 and 60 days, weeds full control, weeds interference and weeds control after 20, 40 and 60 days) on growth and yield of forage maize 454. The experiment based on full-randomized blocks design with three replications was conducted at research farm of Islamic Azad University of Tabriz located at 15th km of East Tabriz in 2013. According to the results, weeds interference after 40 and 60 days as well as weeds control after 20 days prevented from decrease of maize biomass resulted from weeds presence while weeds interference after 20 days, weeds interference and weeds control after 40 and 60 days led respectively to 41.2%, 35%, 25% and 32.5% decrease of forage maize biomass. The weeds-influenced decrease was manifested at different parts of the plant depending on presence period of weeds. Decrease of fresh weight of ear and fresh weight of leaf and stem was observed due to weeds interference after 20 days and weeds interference. If weeds are controlled after 60 days, decrease of ear weight and fresh weight of stem will lead to biomass decrease. Also, if weeds are controlled after 40 days, decrease of fresh weight of maize stems will result in biomass decrease. Ear traits were affected by weeds control treatment. Being affected by treatments of weeds interference after 20 days, weeds non-interference, weeds control after 40 and 60 days, ear length was shortened 29.9 %, 41.4 %, 27.6 % and 37.2 %, respectively. The stem diameter demonstrated a significant decrease although it was only affected by treatments of weeds interference and weeds control after 60 days. Considering results of the present study, generally, it is suggested to control weeds during initial 20-60 days of maize growth in order to prevent undesirable effect of weeds on growth, production and production biomass of maize and decrease of production costs.

**Keywords :** maize, competition, weed, biomass

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