ABSTRACT

DETERMINATION OF THE EFFECTS OF SOIL MOISTURE DURING TREATMENT AND DIFFERENT IRRIGATION TIMING AFTER TREATMENT ON THE PERFORMANCE OF SOIL HERBICIDES;

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The aim of this study was to investigate the effects of soil moisture during treatment and different irrigation timing after treatment on the performance of two soil herbicides with fluometuron and flurochloridone active ingredients. Dose-response experiments were carried out at the first step to determine the ED_{50} and ED_{90} doses of both herbicides in order to use discriminate doses for further studies. As the result ED_{50} and ED_{90} doses of Fluometuron were determined as 62,5 and 125 ml/da, respectively, while 50 and 100 ml/da doses were determined for Flurochloridone. At the second step of the study these doses were applied to soils with different moisture levels and the effect of herbicides were assessed on *Amaranthus retroflexus* L. (Redroot pigweed) and *Portulaca oleracea* L. (Common purslane). Although results of these studies were variable depending on the experiment, dose and weed species, it has been generally observed that the herbicide effect was higher as with increasing soil moisture. Also at the second step herbicides were applied to dry soils and then irrigated at different timings after treatment, in order to evaluate the effect of irrigation timing after treatment on herbicide efficacy. As the result lowest effects of both herbicides were obtained with irrigations done after 14 days and later, while highest efficacy was obtained when irrigations were done 1-7 days after treatment, this case was especially observed with ED_{50} doses of herbicides. Results of these studies revealed that irrigation after treatment is more important for herbicide efficacy than soil moisture during herbicide treatment.

Key words: Fluometuron, Fluchloridone, Soil herbicides, Soil moisture, Irrigation time,