EVALUATION OF IMAZETHAPYR SL AGAINST GRASSY WEEDS IN MUNGBEAN CULTIVATION

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This field study was conducted to evaluate the bio-efficacy and phytotoxicity and then to quantify optimum time and dosage of application of newly introduced herbicide Imazethapyr 10% SL against grassy weeds in mungbean [*Vigna radiata* (L.) R. Wilczek]. The study was conducted during *Maha* season 2019/20 at the Research Unit of Faculty of Agriculture, Rajarata University of Sri Lanka. The experiment was laid out on a split-plot design with fourteen treatment combinations and three replicates for each. The main plot factor and the subplot factor were the time of application and herbicide concentration, respectively. Time of application had two levels; namely pre-emergence and post-emergence (19 DAS). Imazethapyr concentrations were at 50 gha^{-1}, 62.5 gha^{-1}, 75 gha^{-1}, 100 gha^{-1}, and 125 gha^{-1}, while a weed-free and an un-weeded treatment used as benchmarks. The weed count was significantly low in pre-emergence Imazethapyr 10% SL at 125 gha^{-1}at 20 DAS. At flowering, the weed biomass and density were lower in post-emergence than the pre-emergence applications across all Imazethapyr 10% SL concentrations. Plant biomasses at flowering were significantly higher in all herbicidal treatments than the un-weeded control ($p<0.05$). Plant biomasses were similar across the Imazethapyr 10% SL concentrations; nevertheless, no difference was observed ($p>0.05$) between pre- and post-application at flowering stage. Five days after the post emergent application, SPAD readings were low in high concentrations of Imazethapyr 10% SL compared to the mean SAPD reading of corresponding pre emergence application; nevertheless, plants recovered in ten days. Grassy weeds were less abundant in herbicide treated plots; however, even at higher concentrations of Imazethapyr 10% SL *Cleome viscosa*, *Ocimum sanctum*, *Euphorbia hirta*, and the sedge *Cyperus rotundus* were abundant. The post-emergence application of Imazethapyr 10% SL at the rate of 125 gha^{-1}, 19 days after sowing was found to be effective in controlling most of the grassy and broad-leaved weeds in mungbean crop.

Keywords: Biomass, Herbicide, Imazethapyr 10% SL, Mungbean, Weeds