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Keyword 1	: Environmental sustainability
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Title of Entry	: Interaction between applied herbicides and soil microorganisms in the transplanted rice
Presenting author	: Dr.P.Spandana Bhatt
Presenting author email	: spandana9119@gmail.com
Co author 1	: Dr.M. Yakadri
Co author 2	: Dr.M. Madhavi
Affiliation presenting author	:
Affiliation 1	:
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Abstract : An investigation on “Interaction between applied herbicides and soil microorganisms in the transplanted rice” was carried out during kharif 2013 and 2014 at college farm, College of Agriculture, Professor Jayashankar Telangana State Agricultural University, Hyderabad. The experiment was laid out in randomized block design with fourteen weed management practices. An experiment was conducted during kharif, 2013 and 2014 at Hyderabad with 14 treatments consisting of pre emergence application of pretilachlor @ 625 g, pyrazosulfuron @ 20 g and bensulfuron methyl @ 60g+pretilachlor @ 600 g at 3 DAT, penoxulam @ 22.5 g and cyhalofop-p-butyl @ 100 as early post emergence at 15 DAT, bispyribacsodium @ 25 g and pretilachlor @ 750 g their combinations with ethoxy sulfuron @ 18.75 g, metsulfuron methyl+ chlorimuron ethyl @ 4g, azimsulfuron @ 35g, pyrazosulfuron @ 20 g ha-1 at 3DAT followed by hand weeding at 25 DAT, hand weeding twice at 25 and 45 DAT and weedy check in RBD replicated thrice. There was an increase in the population of soil bacteria, fungi and actinomycetes in the hand weeded and weedy check plots. In the herbicide treatments, population of soil bacteria, fungi and actinomycetes was lower immediately after spraying. Maximum reduction was noticed at 3 days after herbicide application in both the crop seasons. The reduction in bacteria population was in the range of 23 % and 30% over control during 2013 and 2014 respectively. The percentage of reduction in fungal population was 29.6%, 38.4% and 29.4% in 2013, 28.9%, 37.6% and 33.9% during kharif 2014 in pre, early post and post emergence herbicide plots respectively. Significantly higher reduction was observed in sequential herbicide applied plots than sole application of herbicides. The reduction in actinomycetes population due to herbicide application was less compared to bacteria and fungi population. The bacterial, fungal and actinomycetes population in herbicide treated plots was more or less similar to the unsprayed control plots in later stages i.e. 20 days after herbicide application indicating that herbicides have no detrimental effect on soil health at applied doses.

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