



Impact of Penoxsulam Integrated with Stale Seedbed on Soil Health of Upland Rice Ecosystem

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Abstract: The present investigation was undertaken during *Kharif* season (June - October) of 2017 in Coconut Research Station (CRS), Balaramapuram, Kerala to assess the effect of penoxsulam integrated with stale seedbed on soil health of upland rice intercropped in coconut orchard by analyzing the microbial population (total count of bacteria, fungi and actinomycetes) and enzyme status (dehydrogenase and urease) in the experimental field. The treatments were combination of 2 levels of stale seedbed methods and 8 levels of weed management (combination of penoxsulam @ 20, 25 and 30 g ha⁻¹ at 10-15 DAS with hand weeding at 35 and 40 DAS and with metsulfuron methyl + chlorimuronethyl @ 4 g ha⁻¹ at 35-40 DAS, Hand weeding at 15 and 35 DAS and weedy check) methods. The results revealed that no significant variation was observed between penoxsulam and non-herbicidal plots in microbial population. Compared to just before herbicide application an increase in microbial population as well as enzyme status of soil was observed at 15 and 30 DAHA. The weed management practices did not impart any harmful effect on the microorganisms and the enzyme status of soil indicating the safety of the herbicide penoxsulam on soil health.

Keywords: Microbial population, Penoxsulam, Stale seedbed, Soil enzyme
