Influence of redgram residue incorporation on soil physico-chemical properties in redgram-foxtail millet intercropping system

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ABSTRACT

A field experiment was conducted at RARS, Lam in *Kharif*, 2021 and 2022 to evaluate the effect of organics (Redgram residue and FYM) and bio-fertilizers (VAM and PSB) on phsico-chemical properties of soil under of Redgram and Foxtail millet in Redgram-Foxtail millet intercropping system. The experiment was laid out in Randomized Block Design comprising eight treatments replicated thrice and the treatment combinations include different organics (FYM @ 10 t ha^{-1}, Redgram residue @ 4 t ha^{-1}), Bio-fertilizers and microbial inoculants (Decomposing inoculum, VAM @ 12.5 kg ha^{-1}, PSB @ 1.25 L ha^{-1}) and Inorganic fertilizers (RDF @ 20-50 kg N-P_2O_5 ha^{-1}). Soil pH, EC and CEC were analyzed at mid-season and harvest stages of redgram and foxtail millet crops. Results revealed that among all the physico-chemical properties, CEC of soil was only significantly influenced by the redgram residue incorporation at all the stages of crop growth in both years (*Kharif* 2021 and 2022) in redgram and foxtail millet crops in redgram-foxtail millet intercropping with the highest CEC observed in treatment of soil with Redgram Residue Incorporation (RRI), Farmyard Manure (FYM) , Decomposing Inoculum (DI), Vesicular Arbuscular Mycorrhizae (VAM), and Phosphate Solubilizing Bacteria (PSB). However, pH and EC were not significantly influenced by redgram residue incorporation.

Keywords: *Decomposing Inoculum, Foxtail-millet, Redgram and Residue Incorporation.*