

Impact of Conservation Agriculture on Radiation Interception and Biophysical Properties of Rice-mustard Cropping system

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Abstract—A study was conducted to know the effects of conservation agriculture on interception of solar radiation and radiation use efficiency of rice-mustard cropping system and its relationship with growth, biomass accumulation, harvest index and yield. Rice (*Oryza sativa* L.) was grown in the rainy season (June -October) and mustard (*Brassica juncea* L.) was grown in the winter season (November – April) during 2014-15. Eight different treatments with three replications each following randomised block design was done. Weather parameters, photosynthetically active radiation, leaf area index, biomass accumulation, harvest index and yield were recorded at the regular intervals for this cropping system. In this cropping system, treatment T6 consisting of mungbean residue incorporated zero tillage direct seeded rice followed by rice residue incorporated zero tillage mustard showed maximum fIPAR (fractional intercepted photosynthetically active radiation), RUE (radiation use efficiency), LAI (leaf area index), biomass accumulation and yield and effect of conservation agriculture practices on micrometeorological parameters were clearly discernible.

Keywords: Biophysical parameters, conservation agriculture, radiation interception