

Influence of resource conservation techniques on weed control in green manure maize-pulse cropping system

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Summary Field experiments were conducted at Agricultural College and Research Institute, Madurai during *Kharif* 2016, *Rabi* 2016–2017 and summer 2017. The experiments were laid out in split-split plot design with three replications. The treatments viz., tillage (T), weed (W) and nutrient (N) management practices were assigned as main, sub and sub-sub plots respectively. The experimental results revealed that minimum tillage (T₂) with PE herbicide (Atrazine) followed by one hand weeding (W₂) + 75% NPK + Vermicompost + Bio-fertiliser (N₂) recorded lesser weed density, higher weed control efficiency and enhanced productivity than the conventional practices in maize. Similarly in black gram, zero tillage (T₂) with crop residue mulch

(W₁) + 75% NPK + Vermicompost + Bio-fertiliser (N₂) effectively suppressed the weed growth and achieved the higher weed control efficiency and maximise the economic return when compared to farmers practice. From the present investigation, it can be concluded that, conservation tillage with PE herbicide in maize followed by crop residue mulch in black gram, with 75% NPK + Vermicompost + Bio-fertiliser provides an appropriate management option for the farmers to control weeds effectively for increased crop growth and higher system productivity besides improving soil health.

Keywords Minimum tillage, zero tillage, crop residue mulch, bio-fertiliser, maize, black gram.