

Effect of Tillage and Herbicide Use on Weed Management in Maize (*Zea mays*. L)

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ABSTRACT

A field experiment was conducted on clay loam soils of the Agricultural College Farm, Bapatla, during rabi, 2009-10 under irrigated conditions. The treatments consisted of two systems of tillage and eight weed control methods. Application of either atrazine @ 1.25 kg a.i ha⁻¹ or pendimethalin @ 1.5 kg a.i ha⁻¹ in combination with paraquat @ 0.6 kg a.i ha⁻¹ at 3 weeks after sowing (WAS) recorded lower weed density (16.67 m⁻²) and drymatter comparable with that of two handweeding and intercultivation with power weeder at 4 WAS. The higher weed control efficiency with lower weed index (21.3%) was noticed with application of atrazine @ 1.25 kg a.i ha⁻¹ + paraquat @ 0.6 kg a.i ha⁻¹ application followed by pendimethalin @ 1.5 kg a.i ha⁻¹ + paraquat @ 0.6 kg a.i ha⁻¹ and these were on a par with that of weed free check and intercultivation with power weeder. Apart from weed free check and intercultivation with power weeder, pre-emergence application of atrazine @ 1.5 kg a.i ha⁻¹ or pendimethalin @ 1.5 kg a.i ha⁻¹ in combination with paraquat recorded significantly taller plants, higher drymatter and higher N, P and K uptake by weeds over the application of atrazine or pendimethalin alone.

Key words : Nutrient uptake, Tillage, Weed density, Weed drymatter.