

Sequential Application of Herbicides for Weed Management in Rice Fallow Maize Under Zero Tillage (*Zea mays L.*)

E Venkateswarlu, B Pramila Rani, K Srinivasulu and G Subba Rao
Regional Agricultural Research Station, Lam, Guntur, A.P.

ABSTRACT

A field experiment was conducted in farmers' fields in Guntur district on clay loam soils during *Rabi* 2015-16 and 2016-17 to study the effect of sequential application of various pre and post emergence herbicides for weed management in rice fallow maize under zero tillage and their influence on growth and yield of maize. The weed management treatments included hand weeding twice at 15 & 30 DAS, application of pre-emergence herbicides and sequential application of pre and post emergence herbicides. Atrazine @ 1.0 kg/ha + paraquat @ 0.60 kg/ha PE fb paraquat @ 0.60 kg/ha at 25-30 DAS, atrazine @ 1.0 kg/ha + paraquat @ 0.60 kg/ha PE fb topamezone @ 0.025 kg/ha at 25-30 DAS and atrazine @ 1.0 kg/ha + paraquat @ 0.60 kg/ha PE fb tembotrione @ 0.100 kg/ha at 25-30 DAS reduced the weed dry weight on par with hand weeding treatment, resulting in higher weed control efficiency in these treatments. Hand weeding treatment recorded the highest plant height at 30 & 60 DAS and harvest. Atrazine @ 1.0 kg/ha + paraquat @ 0.60 kg/ha PE fb topamezone @ 0.025 kg/ha at 25-30 DAS and atrazine @ 1.0 kg/ha + paraquat @ 0.60 kg/ha PE fb tembotrione @ 0.100 kg/ha at 25-30 DAS also recorded plant height on par with hand weeding treatment at all stages. Hand weeding treatment recorded the highest grain yield (10309 kg/ha). Atrazine @ 1.0 kg/ha + paraquat @ 0.60 kg/ha PE fb topamezone @ 0.025 kg/ha at 25-30 DAS (10016 kg/ha) and atrazine @ 1.0 kg/ha + paraquat @ 0.60 kg/ha PE fb tembotrione @ 0.100 kg/ha at 25-30 DAS (9766 kg/ha) were on par with hand weeding for grain yield and these three treatments were significantly superior to all other treatments. Even though hand weeding treatment recorded the highest gross income (Rs.154594/ha), net income recorded was high in atrazine @ 1.0 kg/ha + paraquat @ 0.60 kg/ha PE fb tembotrione @ 0.100 kg/ha at 25-30 DAS (Rs.78639/ha) and atrazine @ 1.0 kg/ha + paraquat @ 0.60 kg/ha PE fb tembotrione @ 0.100 kg/ha at 25-30 DAS (Rs.75963/ha).

Key words: *Maize, Pre and post emergence herbicides, Zero tillage.*