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DIFFERENTIAL AGRONOMIC EFFICIENCY OF TWO SUNFLOWER HYBRIDS FERTILIZED WITH THREE SULPHUR SOURCES

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ABSTRACT

Efficiency of three sulphur sources, viz: ammonium sulphate, single superphosphate and gypsum was evaluated under field conditions for their influence on growth and yield of PARC-92E and Hysun-33 hybrids of sunflower. Sulphur from the three sources was applied @ 0 and 37 kg S /ha. The two sunflower hybrids responded differently to S application from the three sources because there was a significant ($p < 0.05$) hybrid x sulphur source interaction. Response of the two sunflower hybrids to the three sources was in the order of ammonium sulphate > single superphosphate > gypsum. The sunflower hybrid, PARC-92E responded better than Hysun-33 to S application.

INTRODUCTION

Recent introduction of sunflower to our crop production system is an effort to improve local production of edible oils which would subsequently curtail foreign exchange incurred on importing edible oils for domestic consumption. Area under sunflower cultivation has increased dramatically over the years. Supplementing soil nutrients' supply through fertilizer application is imperative for economic crop yields under modern agricultural

=7.31 and EC (1:1) = 0.48 dS m^{-1} (Richard, 1954). Sulphur extracted by $CaCl_2$ from the soil was 7.8 mg Kg^{-1}. Ammonium bicarbonate. DTPA extractable P and K was 3.0 and 56.0 mg Kg^{-1} respectively. The experiment comprised of eight treatments including S application to Hysun-33 and PARC-92E sunflower hybrids from ammonium sulphate, gypsum and single super phosphate alongwith control. Sulphur was applied @37 Kg S ha^{-1} from the three sources. Nitrogen and P were applied uniformly @ 100 Kg N ha^{-1} and 30 kg P ha^{-1} respectively. Ammonium sulphate, single super phosphate (SSP) and gypsum were used as sulphur sources while N and P were balanced by urea and di-ammonium phosphate (DAP). All P and S fertilizers and 1/2 N were incorporated into the soil before sowing. Remaining 1/2 N was applied 30 days after germination. The experiment was laid out in quadruplicate according to split plot design with hybrids being in the main plots and sulphur sources in the sub-plots (Steel and Torrie, 1980). Six rows each of Hysun-33 and PARC-92 E hybrids of sunflower were planted by dibbling seeds of each hybrid into the soil.

Each row was 5 m long and those were 0.75 m apart in a 5 x 0.5 m^2 plot. Thinning was done to