

EFFECT OF POLYMERS ON NUTRIENT UPTAKE AND SOME CHARACTERISTICS
OF MAIZE (*ZEA MAYS*)

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ABSTRACT

The study was conducted on clay loam soil in green house. Organic manure, Aquasorb and Terrasorb were mixed into the soil @ 20 g 5 kg⁻¹. Maize (Santori) was sown as a test crop. Terrasorb application significantly increased the germination. The plants growing in Aquasorb treated soil showed greatest height compared with Terrasorb and organic manure application. Average soil moisture content were found in the order of Aquasorb > Organic manure > Control treatments. There was not significant effect of polymer application on nutrient content in the soil as well as the plants.

INTRODUCTION

Moisture stress and deficiency in plant food are main limitations in crop production. Efficient utilization of meager water and soil resources prompts the adoption of appropriate water management practices. Gel conditioners proved to be effective in increasing water holding capacity (Miller 1979, Hemyari and Nofziger 1981, Al-Omran *et al.*, 1987). Gupta and Aggarwal (1980)

greenhouse on clay loam soil having saturation percentage 27, pH 7.9 and Ece 0.34 dSm⁻¹. The total nitrogen, available phosphorus and potassium contents were 30, 4.8 and 190 mg kg⁻¹. Five kg soil was filled in plastic pots. Fertilizer was applied @ 100 kg N and 80 kg P₂O₅ ha⁻¹ in the form of urea and Diammonium phosphate (DAP) which was thoroughly mixed into the soil of each pot. Organic manure, Aquasorb and Terrasorb were mixed into the soil @ 20 g 5 kg⁻¹ and the treatments were as follows :

- T1 = Control
- T2 = 20 grams organic manure 5 kg⁻¹
- T3 = 20 grams Aquasorb 5 kg⁻¹
- T4 = 20 grams Terrasorb 5 kg⁻¹

Aquasorb is a synthetic polymer having 90 per cent active ingredient, 1.08 specific gravity of dry polymer and 0.85 g cm⁻³ bulk density. Terrasorb is also a polymer which acts like a super sponge. The experiment was replicated three times. The pots were saturated with distilled water