

# **WATER HOLDING CAPACITY OF SOIL AND YIELD OF BITTER GOURD AS AFFECTED BY SYNTHETIC POLYMERS**

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## **ABSTRACT**

A green house study was carried out (at the Department of Soil Science, University of Arid Agriculture, Rawalpindi) to investigate the effect of synthetic polymers; Qemisoyl and Curasol on physio-chemical properties i.e. water holding capacity of soil and yield parameters of Bitter Gourd (*Momordica charantia*) crop. Both polymers were applied in ten different treatments, containing  $T_1$ (control),  $T_2$ (0.1% Qemisoyl),  $T_3$ (0.2% Qemisoyl),  $T_4$ ( 0.3% Qemisoyl),  $T_5$ ( 0.1% Curasol),  $T_6$  (0.2% Curasol),  $T_7$  ( 0.3% Curasol),  $T_8$ ( 0.1% Qemisoyl + 0.3% Curasol),  $T_9$ ( 0.2% Qemisoyl + 0.2% Curasol) and  $T_{10}$ ( 0.3% Qemisoyl + 0.1% Curasol) respectively, under controlled conditions. Fertilizers were applied @ 100-80-40 kg ha<sup>-1</sup>; N, P, K respectively. It was revealed that the polymers have significant effect on soil moisture contents as compared to control and treatments with higher levels of polymers have more moisture retention in both types of polymers. The moisture contents increased from 8.77% (control) to 20.87% (0.2% Qemisoyl + 0.2%Curasol) and Bulk Density decreased from 1.60 gcm<sup>-3</sup> (control) to 1.26 gcm<sup>-3</sup> (0.2% Qemisoyl + 0.2% Curasol, 0.1% Qemisoyl + 0.3% Curasol). Vegetative growth and fruit yield also increased significantly.