

Effect of soil moisture stress at various growth stages on growth and productivity of summer groundnut (*Arachis hypogaea* L.) genotypes

P.M. VAGHASIA*, K.V. JADAV AND M.V. NADIYADHARA

Main Oilseeds Research Station, Junagadh Agricultural University, JUNAGADH(GUJARAT) INDIA

ABSTRACT

The field experiment was conducted in summer season on clay soil at Main Oilseeds research Station, Junagadh Agricultural University, Junagadh to study the effect of soil moisture stress at various growth stages on yield of summer groundnut (*Arachis hypogaea* L.) with six genotypes. Pooled analysis of data indicated that imposing a transient moisture stress significantly reduced the pod per plants, shelling, 100-kernal weight, harvest index and oil content. While, moisture stress at flowering and pod development stages by withholding irrigation does not affect the productivity of the groundnut crop significantly and save about 33.33 % of irrigation water by reducing the number of irrigations during summer season, but stress at flowering stage (25-47 days after sowing) and pod development stage (50-72 days after sowing) gave 18.45 % and 30.63 % reduction in pod yield than no moisture stress treatment, respectively. Different groundnut genotypes do not exerted their significant effect. The highest water use (84.35 cm) and benefit: cost ratio (2.42) was obtained under no moisture stress. While, maximum water-use efficiency (WUE) was achieved under water stress imposed at flowering stage. Among the genotypes GG 6 recorded higher water-use efficiency (WUE) and benefit: cost ratio. Groundnut was the most tolerant of post flowering stress among the different legumes.

Key words : Summer groundnut, Moisture stress, Genotype, Clay soil

* Author for correspondence.