

P 3.25 - TE and water kinetics- relation with yield components: in peanut (*Arachis hypogaea* L.) under drought

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Transpiration efficiency (TE) is an important trait for drought tolerance in peanut (*Arachis hypogaea* L.). The variation of TE was assessed gravimetrically using a long time interval in nine peanut genotypes (Chico, ICGS 44, ICGV 00350, ICGV 86015, ICGV 86031, ICGV 91114, JL 24, TAG 24 and TMV 2) grown in lysimeters under well-watered and drought conditions. The transpiration was measured by regular weighing of the lysimeters whose soil surface was mulched with a 2-cm thick layer of polythene beads. Transpiration efficiency in the nine genotypes used varied from 1.4 to 2.9 g kg⁻¹ under well watered and 1.7 to 2.9 g kg⁻¹ under drought conditions, showing consistent variation for TE among the nine genotypes. Higher TE was found in ICGV 86031 in both well-watered and drought condition and lower TE was found in TAG-24 under both the water regimes. Although the total water extraction differed little across genotypes, the pattern of water extraction from the soil profile varied among the genotypes. High water extraction within the 24 days following stress imposition was negatively related to pod yield ($r^2 = 0.36$), and negatively related to water extraction during a subsequent period of 32 days ($r^2 = 0.74$). By contrast, the latter, *i.e.*, water extraction during a period corresponding to grain filling (between 24 and 56 days after flowering) was positively related to a higher pod yield ($r^2 = 0.33$). Transpiration efficiency was significantly and positively correlated with pod weight ($r^2 = 0.30$) under drought condition. Our data showed that under the intermittent drought regime, TE and water extraction from the soil profile during a period corresponding to pod filling appeared to be the most important traits.



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ABSTRACTS



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