

POPULATION, GROWTH AND WATER USE OF
GROUNDNUT MAINTAINED ON STORED WATER.
III. DRY MATTER, WATER USE AND LIGHT
INTERCEPTION

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SUMMARY

At a field site in central India, four populations of groundnut (*Arachis hypogaea* L.) were grown on stored water to investigate how the production of shoot and root dry matter is related to transpired water and intercepted radiation. Throughout the season, total dry matter was closely related to transpiration (slope = 3.0 mg dry matter g⁻¹ water) and the amount of radiation intercepted by foliage (slope = 0.74 g dry matter MJ⁻¹ radiation intercepted). Accumulated transpiration increased linearly with intercepted radiation at 0.37 kg water MJ⁻¹ in the sparser stands. In the densest spacing, the initial slope of the relation at 0.28 kg MJ⁻¹ decreased later in the season because water deficits curtailed growth without a concomitant reduction in the interception of radiation.

S. N. Azam-Ali, L. P. Simmonds, R. C. Nageswara Rao y J. H. Williams: Población, crecimiento y aprovechamiento de agua del cacahuete mantenido a base de agua almacenada. III. Materia seca, aprovechamiento del agua e intercepción de la luz.

RESUMEN

En una localidad en la India central se cultivaron cuatro poblaciones de cacahuete (*Arachis hypogaea* L.) a base de agua almacenada, para investigar la relación entre la producción de materia seca de retoños y de raíces, y el agua transpirada y radiación interceptada. A lo largo de la estación, la materia seca total estaba estrechamente relacionada con la transpiración (pendiente = 3,0 mg de materia seca g⁻¹ de agua) y la cantidad de radiación interceptada por las hojas (pendiente = 0,74 g de materia seca MJ⁻¹ de radiación interceptada). La transpiración acumulada aumentó de forma lineal con la radiación interceptada a 0,37 kg de agua MJ⁻¹ en las poblaciones menos densas. En el espaciamiento más denso, la pendiente inicial de la relación a 0,28 kg MJ⁻¹ disminuyó más tarde en la estación porque la falta de agua redujo el crecimiento sin que haya una reducción concurrente de la intercepción de radiación.

INTRODUCTION

The availability of water to plant roots and the interception of solar energy by leaves are two major constraints on the growth of crops. There is much evidence, particularly early in the season, that crops accumulate dry matter at a

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