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Full Length Research Paper

Growth and evapotranspiration of groundnut (*Arachis hypogaea*) in a transitional humid zone of Nigeria

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Abstract

This experiment was conducted in the transitional humid zone of Nigeria to examine crop evapotranspiration and growth characteristics of groundnut (*Arachis hypogaea L.*) for that ecological zone. The crop was grown in and outside a drainage lysimeter for two years. Mean total water used (Evapotranspiration) by the crop during the 105 days from sowing to harvest was 302.5 mm. More water was used between the vegetative and reproductive growth stages of the crop, that is, between 20 and 60 days after planting DAP. The highest mean leaf area (LAI) obtained was 7 at 75 DAP. Lysimeter mean grain yield was 940 kg/ha while mean yields in rainfed plots was 1511 kg/ha. Yield from the rainfed plot was significantly different (p = 0.01) from yields from the lysimeter plot. There was high positive correlation (p = 0.01) between growth parameters and water use. Dry matter accumulation was highest between 75 and 90 DAP when canopy radiation interception was between 70 and 80 percent.

Key words: Drainage lysimeter, crop evapotranspiration, leaf area index, dry-matter accumulation, yield, canopy radiation interception.

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