



P 01 Effect of water stress at different growth and development stages on morphology and yield of Groundnuts (*Arachis hypogea* L.)

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Groundnut variety Tissa (*Arachis hypogea* L.) is sensitive to both excessive and deficit water which leads to decrease yield. We studied the growth and reproduction of Groundnut variety Tissa due to 10 day water stress at different growth stages; vegetative (T2), flowering (T3) and at maturity (T4). The study consisted with a control (T1), with daily water supply through all growth stages. Experiments were arranged in Complete Randomized Design with five replicates and the experiment was repeated two times. AIL measured characters; Plant shoot length, Plant root length, Number of pods, Seed weight were significantly affected by the water stress. Results showed that water stress was highly significant for seed yield and Biological yield. The highest seed yield was obtained by T1 (14.1g per plant) and the least seed yield belonged to T3 (1.9g per plant). The highest number of pods per plant was obtained by T1 (12 per plant) and the least number of pods per plant was obtained by T3 (5.2 per plant). Plants stressed during flowering stage had the lowest pod and seed yield (1.9g) per plant. The mean root length was significantly higher in T2 (27.58cm) compare to all other treatments. Water stress at vegetative stage induced flowering than other treatments. The highest shoot length (80.15cm) was recorded in control treatment whereas least height was recorded in T2 (54.1cm). Water stress reduced plant height in plants stressed during the vegetative and flowering stages. Finally we confirm that water stress at different growth stages; vegetative, flowering and maturity stage significantly affected to the growth and reproduction of Groundnut variety Tissa in different ways. Our results indicated that drought at flowering stage should be avoided to increase seed yield of Groundnut variety Tissa.

Keywords: Groundnut variety Tissa (*Arachis hypogea* L.)