

## Growth Performance of Groundnut (*Arachis hypogaea* L.) Seeds from Organically and Inorganically Treated Plants

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A field experiment was carried out at the Agronomy farm of the Eastern University, Sri Lanka in 2010 to study the growth performance of groundnut plants developed from seeds which were harvested from both organic and inorganic fertilized plants. Treatments were assigned according to the seed stock from recommended inorganic fertilized plants (T 1), no fertilizer (T2) and from the plants grown with 5, 10, 15 and 20 t ha<sup>-1</sup> cattle manure (T3, T4, T5 and T6 respectively). The experimental design was randomized complete block design (RCBD) with three replications. All agronomic practices were uniform to all treatments except plant materials. Growth measurements were taken and analyzed statistically. The results showed that difference in treatments significantly influenced plant growth of groundnut mostly after flowering stage. Among the treatments, plants developed from groundnut seeds which were collected from 15 t/ha cattle manure fertilized field (T5), exhibited significantly ( $P < 0.05$ ) higher dry weights of leaves (12.51 g), stem (16.09 g), root (0.61 g) and nodule (0.19 g) per plant than that in recommended inorganic fertilizer (T 1). Further it was noted that dry weight of immature pods per plant was high in T5 (17.38 g) than that in T1 (15.80 g) at 10<sup>th</sup> week after planting however there was no significant variation between them. Plant biomass (46.78 g) was significantly ( $P < 0.05$ ) higher at 10<sup>th</sup> week after planting the progeny of groundnut from 15 t ha<sup>-1</sup> of cattle manure than that from chemical fertilizer. In the Eastern region, farmers mostly harvest their groundnut product at the immature stage due to marketing and storage problem. The result revealed that cattle manure could be used by farmers for better crop production in sandy regosol.

Key words: *Arachis hypogaea*, Growth performance, Organic treatment

