

Effect of Gypsum Application on Yield Performance of Ground Nut (*Arachis hypogea* L.) Varieties in Kilinochchi District, Sri Lanka

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Abstract: Groundnut (*Arachis hypogea* L.) is an important oil crop grown in Sri Lanka. Application of fertilizer is substantially contributing to the yield increment; however improper management of fertilizer and minerals is the specific drawback in the production of good quality and yield in groundnut. To overcome this problem, the application of balanced fertilizer and minerals play a crucial role in the cultivation of ground nut. An experiment was conducted at the Department of Agronomy, Faculty of Agriculture, Kilinochchi to assess the effect of different rates of gypsum application on yield performance of groundnut varieties during the period of January to May 2019. Two factor factorial experiment was conducted in Randomized Complete Block Design (RCBD) with three replications. Four different rates of gypsum application such as 0 kg/ha (T₁ - control), 75 kg/ha (T₂), 125 kg/ha (T₃) and 175 kg/ha (T₄) were used as the first factor and five groundnut varieties, namely Tissa (V₁), Lanka Jumbo (V₂), Tikiri (V₃), Indi (V₄), and ANK G1 (V₅) were used as the second factor. All the agronomic practices were done according to the recommendations of the Department of Agriculture. The yield parameters recorded and shelling percentage was calculated. Data were analyzed by using SAS 9.1 package to perform ANOVA. Best treatment was identified through the means separation by using Duncan's Multiple Range Test at p = 0.05. The yield parameters of fresh and dry weight of pods plant, hundred pods and seeds weight, number of mature and immature pods and total yield were higher in gypsum applied treatments rather than control and the highest in T₄ (175 kg/ha gypsum) treatment. All the yield parameters were significantly different in Lanka Jumbo and ANK G1 from other varieties. However, the number of mature pods and shelling percentage were similar among the varieties. The highest shelling percentage was recorded in Lanka Jumbo under 175 kg/ha gypsum application (T₄). The highest yield parameters were recorded in Lanka Jumbo variety, whereas, the lowest in ANK G1. There was no interaction effect among gypsum application and varieties in the yield parameters. From this study, it can be concluded that application of 175 kg/ha gypsum (T₄) to Lanka Jumbo variety (V₂) can be selected as suitable treatment combination to obtain the substantial yield from groundnut in Kilinochchi District in *Yala* season.