

Research Article

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Influence of organic and inorganic sources of nutrients on the nutrient uptake and yield of groundnut (*Arachis hypogaea* L.) in two texturally different soils

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Summary

Field experiments were carried out in a farmers field at Chinnathanakuppam and Ayeekuppam villages, Cuddalore district during December, 2008 and March, 2009 to evaluate suitable organic and inorganic sources of nutrients to groundnut crop. The experimental soil at Chinnathanakuppam village belongs to Vadalappakam series (*Typic rhodustalf*) with sandy clay loam texture having pH-7.8 and EC-0.36 dS m⁻¹. The soil was low in organic carbon (3.4 g kg⁻¹), medium in alkaline KMnO₄-N (285 kg ha⁻¹), low in Olsen-P (11.0 kg ha⁻¹) and medium in NH₄OAC-K (190 kg ha⁻¹). The experimental soil at Ayeekuppam village belongs to Vadapudupet series (*Typic haplustalf*) with loamy sand in texture, having a pH-8.1 and EC-0.41 dSm⁻¹. The soil was low in OC (2.8 g kg⁻¹), low in available N (230 kg ha⁻¹) and P (9.0 kg ha⁻¹) and medium in available K (160 kg ha⁻¹). The experiment was conducted with 16 treatment combinations. The treatments consisted of different levels of NPK viz., 100 per cent, 75 per cent and 50 per cent RDF and different sources of nutrients viz., farm yard manure @ 12.5 t ha⁻¹, fly ash @ 10 t ha⁻¹ and humic acid @ 20 kg ha⁻¹ along with micronutrients boron @ 10 kg ha⁻¹ and zinc sulphate @ 25 kg ha⁻¹. The experiments was laid out in Randomized Block Design with three replications and tested with groundnut crop variety JL-11. The results indicated that application of 100 per cent RDF + FYM + ZnSO₄ + boron (T₈) recorded the highest pod and haulm yields of 2853 and 4573 kg ha⁻¹ in sandy clay loam soil and 2415 and 3578 kg ha⁻¹ in loamy sand soil, respectively. Among the sources tried, FYM was superior in the performance of yield. Similarly in major nutrients uptake, treatment T₈ showed significant variation with remaining treatments.

Key words : Organics, Inorganics, Micronutrients, Groundnut crop, Texturally different soils, Yield

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