Response of Groundnuts to Rhizobia Seed Inoculation, Inorganic Fertilizer Application and Plant Density

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Plant density and nutrition are among factors that affect crop productivity. On-station experiments were conducted at two sites in Lilongwe, Malawi, during the 2019/20 and 2020/21 growing seasons to evaluate the effects of plant density, rhizobia seed inoculation and inorganic fertilizer application on yield and biological nitrogen fixation of two groundnut varieties, Chitala (Spanish) and CG-9 (Virginia).

The results showed that the varieties responded differently to density and inputs (rhizobia seed inoculant and inorganic fertilizer) and density. In both varieties, inorganic fertilizer (D-compound) increased nodule weight and total amount of N fixed by groundnut by 20 to 35%; while application of inoculant increased nodule numbers per plant. This study has also established that the Spanish variety (Chitala) is more responsive to inorganic fertilizer and rhizobia seed inoculant than Virginia variety (CG-9).