Integrated Effect of Fertilizer, Variety and Management Practices on Insects and Disease Infestations, Yield and Quality of Peanut in Ghana

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P*e*anut (*Arachis hypogaea* L.) is an important food and cash crop in Ghana although it suffers low yields in farmer fields due to pest damage, low fertility, and limited genetic ability in traditional varieties. A study was conducted to determine the influence of fertilizer, variety, and management practice on yield and quality of groundnut over two cropping seasons in Ghana. A split-split plot experimental design with fertilizer (no fertilizer versus 375kg/ha of YARA legume fertilizer) as the main plot, variety (Chinese versus Sarinut 2) as the sub-plot, and management practices including the traditional farmer practice (FP) versus improved practices (IP). The IP included one additional weeding, insecticide spray to suppress foliar insects, and applying local potassium-based soaps to suppress arthropods and pathogens. In both years, arthropod pests recorded were white grubs, millipedes, termites, wireworm, and aphids. In general, pest numbers, damage, leaf spots and rosette disease severity were highest on plots planted to Chinese under the FP compared with the IP with Sarinut 2. As expected, yields were lowest (1634 kg/ha) on FP-managed plots with no fertilizer and greatest (3155kg/ha) for IP-managed plots with fertilizer. Pearson correlation analyses showed positive relations between grain yield and yield components but negative correlation between grain yield and insect pest populations, damage and disease severities. Hence, cultivating improved groundnut varieties such as Sarinut 2, applying fertilizers and adopting the improved practices tested in this study is key to farmers increasing their yields per unit area.