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Efficacy of native strains of arbuscular mycorrhizal Fungi on maize productivity on ferralitic Soil in Benin**Mevognon Ricardos**

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In a context of sustainable agriculture, the use of arbuscular mycorrhizal fungi (AMF) represents a potential tool for environmentally friendly agricultural management in the face of the challenges of climate change and the reduction in the costs and disadvantages of mineral fertilization. This study therefore aims to evaluate the performance of five indigenous strains of AMF (*Glomus caledonius*, *Rhizophagus intraradices*, *Funnelformis geosporum*, *Acaulospora capsicula*, *Acaulospora dilatata* and *Diversispora globifera*) on maize productivity. The experimental design was a split-split plot with three replicates with chemical fertilizer and type of mycorrhizal fungus as factors. The different parameters of growth, yield and mycorrhization were evaluated. The results obtained showed that inoculation of corn with the native strains of AMF had a significant effect ($P < 0.01$) on corn growth and yield. Of all the native AMF strains, co-inoculation of *G. caledonius* + *R. intraradices* + *F. geosporum* in combination with 50% NPK? Urea of the recommended dose induced the best growth and an increase in maize grain yield of 62.5% compared to uninoculated plants. In addition, the root colonization rate of maize plants was 46% for a quantity of 2 and 3 spores/g of soil. The study shows the possibility of valorizing Benin's indigenous AMF as bio-fertilizers while reducing by 50% the use of mineral fertilizers for maize cultivation.

Biography

Mevognon Ricardos holds a PhD in soil microbiology, soil fertility, and plant nutrition from the University of Abomey Calavi in Benin. He also earned a Master's in Physiology and Applications, focusing on Nutrition and Food Security, and a professional Master's in Agronomic Sciences with a specialization in Plant Production. His research demonstrated that using native mycorrhizal fungi strains with 50% of the recommended mineral fertilizer for corn yields results comparable to using 100% of the fertilizer. Ricardos has co-authored 12 scientific papers and participated in numerous scientific presentations. In collaboration with INRAB and CNS-Maïs, he formulated a biofertilizer based on mycorrhizal fungi, successfully tested on corn and cotton. In 2022, he won a competitive call to strengthen managerial and entrepreneurial skills at the University of Abomey Calavi, reflecting his commitment to sustainable agriculture and environmental preservation.