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Effect of ecto and endomycorrhizae on seedling growth of four savanna tree seeds in Nigeria *(Tamarindus indica (*L*), Albizia lebbeck (benth), Prosopis africana (*L*)* and *Parkia biglobosa (Jacq.B))*

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Studies were conducted to determine the effect of ecto and endo mycorrhizal inoculums on seedling growth of four savanna tree seeds in Nigeria. Endomycorrhizae (*Glomus mosseae*) and ectomycorrhizae (*Suillus luteus*); both were used in crude forms. The relative endomycorrhizal dependency of the seedlings were maximum in Parkia seedlings by having up to 68%, 41.0% in Albizia, 35.0% in *Tamarindus* and the least was 21% in *Prosopis* seedlings. However, *Tamarindus* seedlings had the highest ectomycorrhizal dependency with about 55.0%, while 54.0% was showed in *Prosopis africana.* About 50.0% and 46.0% were shown in *Albizia lebbeck* and *Parkia biglobossa* seedlings respectively. Ectomycorrhizal inoculation greatly enhanced seedling growth and development of *Prosopis Africana, Albizia lebbeck, Tamarindus indica* and *Parkia biglobossa* had the highest significant difference ($p<0.05$) in leaf area at treatment. Endomycorrhizal inoculation also greatly enhanced seedling growth of Prosopis africana, Albizia lebbeck, Tamarindus indica and Parkia biglobossa had highest significant difference ($P<0.05$) in leaf area, leaf number, petiole length, stem girth and plant heights in the treatment. Treatment means were separated using least significant difference at 5% probability level. The results obtained in this study will foster valuable contributions in the areas of increasing the seedling growth of these savanna tree seeds through the incorporation of both ecto and endo mycorrhizae into the soil. These findings will also assist to increase seedling production for agro forestry purposes in Nigeria.

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Molecular and physiological responses to abiotic stress in forest trees and their relevance to tree improvement

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Advances in understanding plant biology, novel genetic resources, genome modification, and omics technologies generate new solutions for food security and novel biomaterials production under changing environmental conditions. New gene and germplasm candidates that are anticipated to lead to improved crop yields and other plant traits under stress have to pass long development phases based on trial and error using large-scale field evaluation. Therefore, quantitative, objective, and auto-mated screening methods combined with decision making algorithms are likely to have many advantages, enabling rapid screening of the most promising crop lines at an early stage followed by final mandatory field experiments. The combination of novel molecular tools, screening technologies, and economic evaluation should become the main goal of the plant biotechnological revolution in agriculture.

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