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## Evaluation of Okra Accession in Treatment Combinations of Mycorrhiza Fungus, Mushroom Compost and Poultry Manure

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### Abstract

Okra *Abelmoschus esculentus* L. (Moench) is one of the most widely cultivated vegetables by rural farmers of Nigeria due to its high nutritional value. The potentials of biofertiliser as an alternative to inorganic fertilisers in crop production has been identified. Therefore, the growth and yield response of five okra accessions viz NG/TO/02/12/156, NG/OA/03/12/157, NG/OA/05/12/159, IJ-OND Okr 1 and IJ-OND Okr 2 to sole and combinations in treatment of spent mushroom compost (SMC), *Glomus mosseae* and poultry manure (PM) were investigated at on-farm trial conducted at the research farm of Botany Department, University of Ibadan, Nigeria from December to April, 2013. The experiment was laid out factorially in a complete block design with eight treatments and three replicates. The Arbuscular mycorrhizal fungus (AMF) *G. mosseae*, mushroom compost and poultry manure were inoculated to 8 kg soil at the rate of 1.67 g, 2.5 g and 5 g each per plant, while the control had 0 g. The result showed that the interactive effect of replicates, treatments, week after planting and replicate  $\times$  treatment were highly significant ( $p < 0.01$ ) for most of the agronomic parameters, but non-significant at replicate  $\times$  week after planting level. The effect of treatment  $\times$  week after planting was also significant for number of leaves, leaf length and leaf width, but non-significant for plant height. Again, *G. mosseae* + PM treated plants produced the highest mean number of leaves of 9.66 and were significantly different from other treatments and control. *G. mosseae* + SMC had the highest value of plant height (41.93 cm), leaf length and leaf width compared to other treatments and control. The mean interactive effect of replicates, replicate  $\times$  treatment were non significant for fruit length and width, fruit weight per plant, total number of fruit, but highly significant ( $p < 0.01$ ) for dry weight and seed weight per plant at treatment level. The highest cumulative total number of fruit and fruit weight were recorded for *G. mosseae* inoculated plants. Therefore, these bio-inoculants should be integrated into organic agriculture.

**Keywords:** Bio-inoculants, growth, okra, yield