



Effect of native arbuscular mycorrhiza fungi inocula on the growth of Cowpea [*Vigna unguiculata* (L.) Walp.] in three different agro ecological zones in Burkina Faso

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Original submitted in on 13th October 2016. Published online at www.m.elewa.org on 31st December 2016

<http://dx.doi.org/10.4314/jab.v108i1.8>

ABSTRACT

Objective: The use of symbiotic microorganisms as mycorrhizal fungi to improve the availability of nutrients to plants is of great importance in agriculture. In this study, we were interested in the response of cowpea, variety K VX 396-4-5-2D, to mycorrhizal inoculation in the context of selection of effective Arbuscular Mycorrhizal Fungi (AMF) to improve cowpea productivity.

Methodology and results: Six native AMF inocula (Talé Mossi, Pissila, Worou 1, Worou 2, Yakouta 1 and Yakouta 2), composed of spores contained in cowpea crop soils, were tested in cowpea plants under greenhouse conditions. Microscopic assessment of mycorrhizal colonization and biomass production were evaluated at the flowering/fruiting stage.

Results showed variability among inocula regarding their response to cowpea growth. The frequency of mycorrhizal colonization of inoculated plants was generally high (92%), but the intensities remained low (57.65%). However, Yakouta 2 inoculum has recorded the best frequency (92%) and intensity (57.65%) of mycorrhizal colonization. Inoculation of cowpea with Yakouta 2 inoculum resulted in a significant increase (4 folds) in shoot (3.33 g) and root (1.5 g) biomass compared to control plants (0.5 and 0.3 g respectively for shoot and root biomass).

Conclusion and application of findings: From these results, it appears that Yakouta 2 seems to be the most efficient for the growth of cowpea. This generally showed a beneficial effect of inoculation of cowpea suggesting that an endomycorrhizal strain selection could be carried on for cowpea inoculation *in situ*.

Key words: arbuscular mycorrhizal fungi, inoculation, cowpea, Burkina Faso.