B-128 The use of coir dust to set phosphorus levels for optimization of Vesicular Arbuscular Mycorrhizal effect on the growth performance of host plants

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Studies on the *effectiveness* of individual Vesicular Arbuscular Mycorrhizal (VAM) species on host crop at different available P levels have been lacking. Previous work has attempted to target chosen levels of available P levels with the use of adsorption isotherms, and have looked at VAM colonization, although colonization assay is not necessarily correlated with a growth effect.

This study examined the potential of coir dust to maintain targeted available P levels without the need for adsorption isotherms, which are affected by an array of factors, in order to set boundary P levels for VAM effectiveness with a given host. It was thought that the ability of coir dust to support plant growth would enable growth performance with VAM to be evaluated as well as VAM colonization.

This study demonstrated clearly that both fresh and old coir dust can satisfactorily maintain targeted P levels, having no adsorption characteristics. Although an anion exchange capacity exists, this does not affect the targeting of P levels. The Water-Holding Capacity (WHC) of the coir dust can be used to set P levels when the plant is to be grown. The WHC of coir dust can sustain plant growth for a relatively long time without additional water. However, care must be taken in choosing coir dust for particular P ranges, as initial available P contents will vary with age of the coir dust. Interpretation of available P levels should also be based on the WHC of the coir dust. The initial electrical conductivity of the coir dust will also have to be taken into account.