

BIOMASS RESPONSE OF THREE AM FUNGAL INOCULATED HEDGEROW LEGUMES TO PRUNING REGIMES IN ALLEY CROPPING SYSTEM

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ABSTRACT

The effect of tree pruning at 2 month interval (2 mo pruning regime) and three month interval (3 mo pruning regime) on *Leucaena* (*Leucaena Leucocephala*) *gliricidaia* (*Gliricidia sepium*) and senna (Senna syn. *Cassia siamea*) inoculated with *Glomus deserticola*, an arbuscular mycorrhizal (AM) fungus was investigated on an established alley cropping plot. Inoculation enhanced percentage root infection by a range of 20-47% in *leucaena* and *gliricidia*. Weeds harvested within inoculated plots were about 150% in sole plot to about 339% in *leucaena* plot compared to their non inoculated counterparts. Weed control was more effective at 2 mo than in 3 mo pruning regime and leaf dry weights were improved at specified period of the experimentation for *leucaena* and *gliricidia*. Three month pruning regime produced about 75% higher leaf biomass (ton ha⁻¹yr⁻¹) in *leucaena* and *senna*, whereas for stem production, it was about 100% for *leucaena* and 150% for *senna* than 2 mo pruning regime. *Gliricidia* did not respond to pruning treatment in this respect. It is apparent from this study that pruning of the trees at three month interval appears more attractive in terms of wood production for domestic use in the rural areas and leaf for fodder in alley farming (with livestock) and soil mulching than the two month regime.

Keywords: Inoculation, *Glomus deserticola*, *Gliricidia sepium*, *Leucaena leucocephala*, *Senna siamea*, pruning regime.