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Impact of Fly Ash on Germination and Initial Seedling Growth of *Leucaena leucocephala* (Lam.) De Wit

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Abstract: Impact of fly ash (FA) on germination and initial seedling growth performance of *Leucaena leucocephala* (Lam.) de Wit was studied during 2016-2017. Substrate was prepared by admixing FA to forest soil (S) at five concentrations *viz*.20%, 40%, 60%, 80% and 100% (w/w). The experimental design was CRD with six treatment and three replications. Eighteen hundred freshly collected seeds were treated with hot water and sown at 0.5-1.0 cm depth in germination trays containing substrates of different treatments. Significant ($P<0.05$) variation in germination (G.) period, G. rate, G. capacity and G. Index with respect to FA concentration in growing media was observed (n=100).G. period was reduced by 5.67 days in 20% fly ash admixed growing media (FAAGM) over control (S). Maximum G. rate (88.67%), G. value (18.47) and G. index (1.58) were found in 20% FAAG Mafter 30 days of sowing. Observations pertaining to growth dynamics were recorded at 90 days after transplanting (DAT). Significant difference ($P>0.05$) in seedling survival rate, plant height, diameter growth, nodules per plant and seedling quality index were observed. The survival rate (91.83%) and root nodule number was (7.20) was maximum at 20% FAAGM. But plant height (51.68 cm), diameter growth (3.96 cm) and seedling quality index (0.706) were attained maximum at 40% FAAGM. It is concluded form the present investigation that FA can be admixed @ 20% (w/w)in forest nurseries for improving germination and @40% (w/w) for promoting seedling growth and quality improvement.

***Keywords*:** Forest nursery, Fly ash, Germination catalyst, Pollution control, Seedling quality index, Solid waste management