

## Effect of Bio-inoculants on Growth, Biomass and Nutrient Content of *Casuarina equisetifolia* (Forst.) grown in Decomposed Coir Pith in Nursery Condition

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### Abstract

*Casuarina equisetifolia* is a fast growing, multipurpose, actinorhizal tree capable of fixing atmospheric nitrogen in association with *Frankia*. *Casuarina* play an important role in increasing soil N content, land reclamation and agroforestry. A nursery experiment was conducted to assess the effect of bio-inoculants (*Azospirillum*, *Trichoderma* and *Pseudomonas*) on growth performance of *C. equisetifolia* seedlings grown in root trainers filled with decomposed coir pith as substrate. Growth of *C. equisetifolia* seedlings were monitored up to six months after inoculation with different combinationa of the three inoculants. After six months, the plants were harvested and root and shoot length, collar diameter, root and shoot weight, nodule number and nodule weight were recorded. The total biomass was the highest in *Azospirillum* + *Trichoderma* + *Pseudomonas* (T<sub>7</sub>) inoculated seedlings (54.87% increase over the control), followed by *Azospirillum* + *Pseudomonas* (T<sub>5</sub>) inoculated seedlings (49.17% increase over the control) and *Azospirillum* (T<sub>1</sub>) inoculated seedlings (47.34% increase over the control). Further, the seedling quality index (SQI), microbial inoculation effect (MIE) and nutrient content significantly increased in all the treatments, compared to control. Among the inoculated seedlings, *Azospirillum* + *Trichoderma* + *Pseudomonas* (T<sub>7</sub>) combination performed better. This was followed by *Azospirillum* + *Pseudomonas* (T<sub>5</sub>) combination and *Azospirillum* (T<sub>1</sub>).