

Influence of Biofertilizers on Seedling Growth and Vigour of Indian Redwood [*Soymida febrifuga* Roxb.]- A Lesser Known Tree

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1. Introduction

Soymida febrifuga Roxb. popularly called as Indian Redwood, is one of the lesser-known tree species distributed naturally in the deciduous forests. Its occurrence is found to be random and less dense with poor natural regeneration. In the present study, influence of biofertilizers on growth and vigour of Indian redwood seedlings were assessed in the nursery.

2. Material and methods

The present investigation was conducted at Net House, College of Forestry, NAU, Navsari, Gujarat. For this nursery experiment, twenty-two treatments of six biofertilizers viz. Azotobacter, Azospirillum, Acetobacter, PSB, Pseudomonas and VAM in single and combinations including control, were adopted by following completely randomized design. Observations for growth and vigour parameters were recorded at 180 DAT and data were analysed by following CRD design.

3. Results and discussion

Seedlings of *S. febrifuga* treated with Azospirillum @ 5ml/plant + PSB @ 5ml/plant treatment achieved significantly maximum shoot length (16.01 cm) and collar diameter (4.90 mm), dry wet of plant (3.78 g) and seedling quality index (0.75) at 180 DAT. Present findings of growth and vigour

Table 1. Influence of biofertilizers on the growth and vigour parameters of *S. febrifuga* seedlings at 180 DAT

Treatments	Seedling height (cm)	Collar diameter (mm)	Dry weight of plant(g)	Seedling Quality Index (SQI)
T ₁	11.57	2.83	1.15	0.20
T ₂	12.94	4.13	2.70	0.54
T ₃	12.87	4.20	2.30	0.49
T ₄	13.60	4.15	2.02	0.39
T ₅	12.27	3.93	1.52	0.31
T ₆	13.47	4.10	2.48	0.51
T ₇	12.98	4.20	1.98	0.37
T ₈	13.80	3.94	1.95	0.36
T ₉	14.66	4.38	3.21	0.59
T ₁₀	11.93	4.04	1.76	0.35
T ₁₁	13.44	4.11	1.71	0.30
T ₁₂	13.07	4.33	1.25	0.24
T ₁₃	14.16	4.25	2.33	0.39
T ₁₄	16.01	4.90	3.78	0.75
T ₁₅	12.55	4.15	1.56	0.32
T ₁₆	10.64	3.03	1.75	0.30
T ₁₇	13.34	3.73	2.52	0.46
T ₁₈	13.44	4.17	2.20	0.43
T ₁₉	12.27	3.84	1.72	0.36
T ₂₀	12.37	4.03	1.75	0.38
T ₂₁	13.08	4.07	2.13	0.39
T ₂₂	13.09	3.31	2.10	0.28

Mean	13.07	3.99	2.07	0.40
SEm (\pm)	0.33	0.09	0.05	0.01
CD at 5%	0.95	0.27	0.14	0.04
CV (%)	4.42	4.05	4.19	6.36

parameters of seedlings in the combination of Azospirillum @ 5ml/plant + PSB @ 5ml/plant treatment resulted in significant increase in seedling growth and vigour attributes, where combine application of Azospirillum and PSB made synergistic effect to enhance the seedling growth in *S. febrifuga*. Such inference has also been reported in other tree species like *Gmelina arborea* (Maharana et al 2018) and *Aegle marmelos* (Mohan and Rajendran 2017). Among several biofertilizer treatments, seedlings treated with Azospirillum @ 5ml/plant + PSB @ 5ml/plant was found to be superior and this treatment may be used for raising quality seedlings of Indian Redwood in the nursery for timely transplanting or field planting.

Reference

- Maharana R, Dobriyal MJ, Behera LK and Sukhadiya M 2018. Enhancement of seedling vigour through biofertilizers application in gamhar (*Gmelina arborea* Roxb.). *International Journal of Chemical Studies* **6**(5): 54-60.
- Mohan E and Rajendran K. 2017. Effect of beneficial microorganism on quality seedling production of *Aegle marmelos* under nursery conditions. *TEJAS Thiagarajar College Journal* **2**(1): 28-39.