

Seed Germination and Seedling Growth of *Bauhinia malabarica* Roxb., a Species of Conservation Concern

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1. Introduction

Bauhinia malabarica is a small to moderate sized deciduous Lesser Known and Threatened tree species and vulnerable in Gujarat according to IUCN. Seed coat of this tree species is very hard and does not germinate easily in natural habitats. Further, the seedling growth in initial stage is slow. Thus, the present experiment was conducted to evaluate the effect of pre-sowing treatments on seed germination and early seedling vigour in *B. malabarica*.

2. Material and methods

For the trial, Completely Randomized Design with four repetitions and six different pre-seed treatments were adopted for assessment of seed germination and for seedling growth and vigour study. For germination trial, treated seeds (100 seeds/ treatment/ repetition) were sown in the tray containing soil: sand: farm yard manure (2:1:1 ratio) and after 30 days of sowing, seedlings were transferred into polythene bags having same media of germination for growth and vigour study.

3. Results and discussion

Results showed that significantly maximum germination, mean daily germination, germination value and germination rate index recorded in soaking of seeds in conc. H₂SO₄ for 60 minutes treatment. However, maximum peak value of germination was recorded in soaking of seeds in conc. H₂SO₄ for 90 minutes whereas minimum mean germination time was recorded in soaking of seeds in conc. H₂SO₄ for 30 minutes. The growth and vigour parameters of *B. malabarica* seedlings at 180 days after transplanting showed maximum shoot height, collar diameter, total fresh weight of plant, total dry weight of plant, total leaf area and seedling quality index in soaking of seeds in conc. H₂SO₄ for 60 minutes treatment. Soaking of seeds in conc. H₂SO₄ for 60 minutes was found best treatment for seed germination as well as seedling growth and vigour of *B. malabarica*.

Table 1. Influence of pre-sowing seed treatments on germination parameters of *B. malabarica*

Treatments	G%	MDG	PV	GV	MGT	GRI
T1	59.25	2.12	5.63	12.95	8.06	8.90
T2	72.00	2.57	8.33	21.69	7.24	8.91
T3	75.25	2.69	8.19	22.48	7.61	9.45
T4	69.25	2.48	8.51	21.53	7.33	7.76
T5	4.50	0.16	0.33	0.06	8.40	0.80
T6	72.00	2.57	8.28	21.44	7.38	8.18
Mean	58.71	2.10	6.55	16.69	7.67	7.34
SEm (±)	2.09	0.12	0.30	0.80	0.46	0.30
CD @ 5 %	6.25	0.37	0.90	2.39	N/A	0.91
CV (%)	7.11	11.63	9.14	9.57	11.87	8.26

T1- Soaking of seeds in hot water for 24 hrs, T2- Soaking of seeds in conc. H₂SO₄ for 30 minutes, T3- Soaking of seeds in conc. H₂SO₄ for 60 minutes, T4- Soaking of seeds in conc. H₂SO₄ for 90 minutes, T5- Soaking of seeds in cow dung slurry for 24 hrs, T6- Soaking of seeds in conc. H₂SO₄ for 120 minutes