

Effect of Different Seed Containers on Germination and Seedling Characters in *Tecomella undulata*

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Tecomella undulata (Sm.) Seem, a member of Bignoniaceae, locally known as *rohida* or marwar teak, is an important multipurpose tree of Thar desert. It is found mostly in interdunal areas of Barmer in Rajasthan where annual rainfall is less than 300 mm (Jindal *et al.* 1985). Forest Department generally stores seeds in gunny bags. A loss in seed germination and seedling vigour has been observed in *rohida* (Jindal *et al.* 1990) and *neem* (Venkatesh *et al.* 1990) upon storage. In the present investigation, an attempt has been made to see whether or not there is any effect of type of container on the germination and seedling vigour of *rohida* seeds.

Fully ripe capsules having seeds were collected from a single tree growing at CR Farm, Jodhpur during May 1990. The fruits were thrashed and seeds were dried in sun. The 100-seed weight and moisture content of the seeds before storage were 1.07 g and 6.06%, respectively. About 200 seeds were stored in each container i.e. cloth bag, polythene bag, paper bag and tin. After 16 months of storage, seeds were tested for their germinability on filter paper and there were seven filter-paper lined Petriplates for each treatment. In each Petriplate there were ten seeds. Germination (emergence of radicle) was recorded daily, radicle length and hypocotyl length were recorded after nine days of germination. Germinative energy

index (GEI) (percentage of seeds which have germinated upto the time when the number of seeds germinating per day has reached to peak) was calculated. Data were analysed as per randomised complete block design.

There were highly significant differences among all the four seed storage containers for seed germination and GEI (Table 1). Seed germination ranged from 27.1% when seeds stored in paper bags to 64.3% when stored in polythene bags, with grand mean 44.6%. Better germination was recorded when seeds were stored in polythene bag and tin than when the seeds were stored in cloth bags, the conventional way of seed storage (Table 2). Same trend was observed for GEI. Though there were non-significant differences for radicle length, hypocotyl length and total seedling length, but seedlings were more vigorous in case of seeds stored in polythene bag followed by tin. Jindal and Satya Vir (1993) have also reported in case of neem that germination and seedling vigour was better in case of seeds stored in air-tight containers. In case of air-tight containers, i.e. polythene bags and tin, there is no free exchange of gases, whereas in others, such as cloth bag or paper bag, there is free exchange of gases. Based on our study, it can be said that at room temperature, viability of seeds with low moisture content can be maintained for longer periods, if stored in air tight containers.

Table 1 ANOVA for germination, GEI, radicle length and hypocotyl length in *Tecomella undulata*

Source	d.f.	Germination	MS GEI	Radicle length	Hypocotyl length
Replications	6	278.5	136.2	1.00	0.519
Treatments	3	2479.7**	1648.6**	3.06	0.860
Error	18	176.9	98.6	1.22	0.424

** p < 0.01

References

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Table 2 Germination percentage, GEI, radicle length, hypocotyl length and their total length of seedling from different seed containers in *T. undulata*

Treatment	Germination (%)	Mean values GEI	Length (cm)		
			Radicle	Hypocotyl	Seedling
Cloth bag	30.0	20.2	2.54	2.45	4.99
Polythene bag	64.3	47.5	4.02	2.92	6.94
Paper bag	27.1	17.1	2.75	2.09	4.84
Tin	57.1	42.2	3.32	2.68	6.00
Grand mean	44.6	31.8	3.16	2.54	5.69
SE _m	5.0	3.7	NS	NS	NS
CD 1%	20.5	15.3	1.70	1.00	2.30
CD 5%	14.8	11.0	1.24	0.73	1.68

seedling characters in neem. *Journal of Tropical Forestry* (communicated).

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