

### A Study on Storability of Greengram Varieties

Pulse seeds generally store for longer period compared to cereals and oilseeds (Delouche, 1973). Storage potential of any seeds depends on genetic factor which extends even to species and varieties (Agrawal, 1976 and Dighe *et al.*, 1992). Storage place and its prevailing ambient room temperature and relative humidity greatly affect seed storability under ambient storage conditions. The information on storability of greengram varieties viz., PS-16, Chinamung, TAP-7 and Pusa-Baisaki under ambient storage conditions of Dharwad (Karnataka State) is not available. Hence, a study was conducted to assess the storability of greengram varieties under ambient storage conditions of Dharwad. Freshly harvested seeds of greengram varieties (kharif 1992) with 8-9 per cent moisture were treated with Thiram (2 g/kg seed) and stored in cloth bag for 24 months from October 1992 to September 1994 at Seed Testing Laboratory, Dharwad. Seed samples were tested bi-monthly for germination percentage (Anonymous, 1985) and vigour index (Abdul-Baki and Anderson, 1973). Seedling length and dry weight were recorded on ten randomly selected seedlings from first count of germination test. The data was statistically analysed with Completely Randomised Block Design replicated four times. Values of seed quality parameters given in Table 1 are for 0, 9, 18, 21, 23 and 24 months only.

The results revealed that greengram

varieties differed in storability. Germination percentage of all greengram varieties was found to decrease with the increase in storage period. The viability as per the minimum seed certification standard (75%) was maintained upto 21 months in PS-16, Chinamung and TAP-7 while for 23 months in Pusa-Baisaki. Such varietal differences in seed storability were reported by Sreeramaiah and Bommegowda (1992). Storage potential depends mainly on initial seed quality, storage place, its prevailing room temperature and relative humidity. A temperature of 30° C and 70 per cent relative humidity are considered as upper safe limits for short and medium term storage (Agrawal, 1976). Based on this Kulkarni and Vyakaranahal (1987) considered Dharwad as a poor storage place. In the present study, the temperature was within 30°C but relative humidity exceeded 70 per cent in all the months of storage which might have resulted in the loss of seed viability.

The seedling length, dry weight and vigour index were also found to decrease with the increase in storage time in all varieties of green gram. Similar decrease in seed vigour attributes in pulse seeds during storage was reported by Sreeramaiah and Bammegouda (1992).

Thus it is concluded that greengram seeds could be safely stored for 20-24 months under Dharwad conditions.

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Table 1. Germination percentage, seedling length, vigour index and seedling, dry weight of green gram varieties during storage

Varieties	Storage Months											
	Generation (%)				Seedlings length (cm)				Vigour Index			
	0	9	18	21	23	24	0	9	18	21	23	24
PS-16	97	88	77	75	45	35	8.4	8.2	5.2	4.8	4.8	4.8
Chinamung	97	98	82	79	73	68	7.3	5.7	4.7	4.3	4.0	4.0
TAP-7	99	84	82	79	74	63	112	101	7.3	5.8	5.0	5.0
PusaBalsaki	89	85	80	79	77	66	129	96	7.3	5.7	5.4	5.0
Mean	98	92	82	78	67	56	8.9	7.9	6.1	5.1	4.8	4.8
S.E.m	0.27	0.48	0.50	0.38	0.51	0.82	0.21	0.22	0.18	0.18	0.16	0.14
CD (P=0.05)	0.82	1.47	1.55	1.17	1.58	2.52	0.65	0.67	0.58	0.56	0.51	0.45
Seedling dry matter (g)	0	9	18	21	23	24	0	9	18	21	23	24
PS-16	0.47	0.42	0.36	0.35	0.34	0.33	0.47	0.42	0.36	0.35	0.34	0.33
Chinamung	0.40	0.36	0.31	0.30	0.29	0.30	0.40	0.36	0.31	0.30	0.29	0.30
TAP-7	0.23	0.20	0.17	0.16	0.14	0.13	0.23	0.20	0.17	0.16	0.14	0.13
PusaBalsaki	0.24	0.20	0.17	0.16	0.14	0.13	0.24	0.20	0.17	0.16	0.14	0.13
Mean	0.33	0.29	0.25	0.24	0.23	0.22	0.33	0.29	0.25	0.24	0.23	0.22
S.E.m	0.005	0.005	0.003	0.006	0.003	0.005	0.005	0.003	0.006	0.003	0.006	0.005
CD (P=0.05)	0.01	0.01	0.02	0.01	0.02	0.02	0.01	0.01	0.02	0.01	0.02	0.02

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