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Accelerated Ageing as a Tool for Predicting Storability of Chilli Seeds*

Seeds are seldom used immediately after harvest thus necessitating their storage for varying periods. According to Doijode (1993) seed storability and seedling vigour are related to the period of storage in bell pepper cultivars Arka Mohini and Arka Gaurav. The most powerful tool to predict storability involves the evaluation of germinative responses of seeds after accelerated ageing (Delouche and Baskin, 1973). Doijode (1988) reported that the capsicum cultivars differed in their germinative percentages after ageing. Pre treatment of seeds with different fungicides has become a routine practice for safe storage of seeds. However, no information is available on the germinative responses of the fungicide treated seeds after subjecting them to accelarated ageing. According to Desai (1976) the seed lots that maintain germination well after accelerated ageing also record good germination when stored under normal conditions. Hence, this attempt.

Red ripe fruits of two chilli cultivars Byadagi kaddi and Dyavanor local from a crop raised in kharif 1996 were harvested, dried and the seeds were extracted manually. After reducing the seed moisture content to seven per cent they were treated with Carbendazmin @ 1 g and Captan @ 2 g per kg seeds and stored in polythene bags for six months. Untreated seed served as control A portion of these seeds were subjected to accelarated ageing by placing on screens of the seed germinator by adjusting the temperature to 45±2°C and 100 per cent relative humidity for upto 8 days. After every 24 hours of ageing, a small portion of the seeds were removed and subjected to standard germination test (ISTA, 1985). Similar methods were followed for every month. The percentage seed germination of accelerated aged seeds and stored seeds of both the varieties (Table) were plotted on a graph to find out the corresponding values of germination so as to

Table 1. Germination of chilli seeds of variety Byadagi kaddi and Dyavanoor local as influenced by ageing and storage period

Days/months of ageing of storage	Percentage germination											
	Dyavanoor local						Byadagi kaddi					
	Control		Bavistin		Captan		Control		Bavistin		Captan	
0	88.00	88.00	89.00	89.00	91.00	91.00	90.00	90.00	92.01	92.01	95.00	95.00
1	88.67	82.00	88.69	87.50	89.33	88.00	90.33	84.67	90.67	90.33	93.67	92.33
2	85.33	77.67	85.33	84.00	88.00	85.33	87.33	80.00	88.67	87.33	93.00	90.00
3	81.33	68.67	82.00	80.00	86.00	82.33	83.33	72.67	85.33	83.33	91.00	86.67
4	76.67	64.00	78.00	74.00	83.33	78.00	78.33	68.00	81.33	78.00	88.33	83.00
5	71.33	55.67	74.00	68.33	79.33	72.67	73.33	63.00	77.00	72.67	85.33	77.33
6	64.50	51.33	68.17	63.00	74.67	67.00	69.33	59.33	74.33	66.67	83.33	70.33
7	57.50		62.17		69.67		64.33		70.33		80.00	
8	51.33		57.00		64.33		59.33		66.33		76.67	

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predict storability.

From the figure it is evident that the varieties differed significantly with respect to germination percentages after ageing. The results after accelerated ageing also showed that by subjecting the seeds for six and eight days of artificial ageing in Dyavanoor local and Byadagi kaddi it can be judged that the seeds be stored for four and six months, respectively. This is further supported by Doijode (1988) who has noticed that the varieties differ interms of germination with ageing.

Further, Captan seed treatment offered better protection compared to Carbendazim (as evidenced by the least number of dead and decayed seedlings) against fungal invasion during the ageing process. Krishnasamy and Suthanthira Pandian (1992) also studied the efficacy of fungicides and attributed the better germination of treated seeds to the protection offered by them.

Thus, from the present study it can be concluded that varieties differ with respect to storability. Storability of chilli seeds can be predicted by subjecting them to accelerated ageing. Captan treatment prolong seed storability. A days artificial ageing corresponds to one months storage.

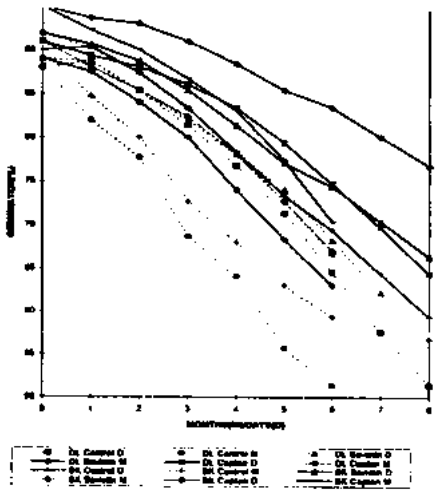

Fig. Germination of chilli seeds of var. Byadagi Kaddi (BK) and Dyavanooor Local (DL) as influenced by ageing and storage period

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