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# Effect of seed treatments and containers on chilli and brinjal seed viability

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### **Authors' contributions**

*This work was carried out in collaboration between three authors. Author SK designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Author SSJ guided during whole period of study and author SK and SS managed the analyses of the study. Authors SK and SSJ managed the literature searches. All authors read and approved the final manuscript.*

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16 **ABSTRACT**  
17

An experiment was conducted to investigate the influence of fungicides and packaging materials on longevity of chilli (variety: RCH-1) and brinjal (variety: Hisar Shyamal) seeds. The seeds were treated with 15 fungicides and were kept in three containers viz. Metal box, Cloth bag and Plastic zipling bag up to 12 months under ambient conditions in seed pathology laboratory of Department of Seed Science & Technology, CCSHAU, Hisar, India. The samples were drawn at quarterly intervals for ascertaining the seed quality parameters. The seeds treated with flusilazole and carbendazim (2g kg<sup>-1</sup> seed) in case of chilli and brinjal and stored in metal-box were found better for maintenance of higher seed quality parameters [electrical conductivity and dehydrogenase activity] during the study period. The study suggested that use of appropriate packaging material and seed treatment could be useful to prolong the storage life of chilli and brinjal seeds.

18  
19 *Keywords: Chilli, brinjal, containers, fungicides, seed quality, storage*

20  
21 **1. INTRODUCTION**

22 India's horticulture production with about 305.4 million tons during 2017-18 has not only brought  
23 prosperity to small and marginal farmers but also provided food and nutritional security to the Nation.  
24 As the second largest producer of Fruits & Vegetables in the world, India's horticulture has today  
25 emerged as one of the vibrant parts of Indian agriculture [1]. Chilli and Brinjal are among important  
26 vegetable crops and belongs to family Solanaceae. No culinary preparation can be completed without  
27 the addition of chilli. Being an indispensable item in the kitchen, it has become the most important  
28 spice crop in the world. The purple colour of brinjal is due to the presence of anthocyanin pigment,  
29 while white fruit lacks this pigment.

30 Seed is a miracle of life and the carrier of technology from one generation to another. Serving  
31 as the first line of defense, seed treatment can improve germination, seedling emergence, stand  
32 establishment and plant vigour. Seed treatment with fungicides not only controls the seed-borne  
33 diseases but also improves seed health, plant stand and crop yield [3].

34 It also reported that the proper storage condition and storage containers can maintain the  
35 seed health status as well as seed viability and vigour in okra [2]. Therefore the study entitled the  
36 "Effect of seed treatments and containers on chilli and brinjal seed viability" was carried out.

37 **2. MATERIAL AND METHODS**

38 The present study was carried out on chilli seed (variety: RCH-1) and brinjal seed (variety: Hisar  
39 Shyamal-8) having seed germination 79 and 81 per cent, respectively above Indian Minimum Seed  
40 Certification Standards (IMSCS). The seeds were treated with fifteen fungicides @ 2 g kg<sup>-1</sup> seed and  
41 kept in the Metal box, Cloth bag and Plastic zipling bag (40 microns) under ambient conditions in seed  
42 pathology laboratory of Department of Seed Science & Technology, CCSHAU, Hisar, India. The study  
43 was conducted up to twelve months to assess the effect of fungicides and containers on chilli and  
44 brinjal seed quality parameters.

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Comment [H2]: Here, scarcity or problems of these subject (first reviewer)

45

Table 1.

Comment [H3]:

Treatments	Fungicides @ 2 g kg <sup>-1</sup> seed	Treatments	Fungicides @ 2 g kg <sup>-1</sup> seed
T <sub>1</sub>	Untreated (Control)	T <sub>9</sub>	Kitazine 48% EC
T <sub>2</sub>	Carbendazim 75% WP	T <sub>10</sub>	Propineb 70% WP
T <sub>3</sub>	Tebuconazole 2 DS	T <sub>11</sub>	Dimethomorph 50% WP
T <sub>4</sub>	Difenoconazole 25% EC	T <sub>12</sub>	Chlorothalonil 78.2% WP
T <sub>5</sub>	Propiconazole 25% EC	T <sub>13</sub>	Captan 70 % + Hexaconazole 5% WP
T <sub>6</sub>	Tricyclazole 75% WP	T <sub>14</sub>	Carbendazim 12 % + Mancozeb 63 % WP
T <sub>7</sub>	Flusilazole 40% EC	*T <sub>15</sub>	Famoxadone 16.6 % + Cymoxanil 22.1 % SL
T <sub>8</sub>	Azoxystrobin 23% SC	T <sub>16</sub>	Flusilazole 12.5 % + Carbendazim 25 % SE
Systemic fungicides from T <sub>2</sub> to T <sub>12</sub> and Combi-fungicides from T <sub>13</sub> to T <sub>16</sub> * Combi-fungicide T <sub>15</sub> was used @ 2ml kg <sup>-1</sup> seed			

46

47 The seeds and fungicide were weighed 21g and 0.042g, respectively of each crop chilli and brinjal,  
48 wearing gloves using the appropriate weighing balance for each treatment. The seeds and fungicides  
49 were mixed in beakers and shaken for some time for uniform distribution all over the seeds. All the  
50 fungicides were in powder formulation except famoxadone 16.6 % + cymoxanil 22.1 % SL, which was  
51 measured by micro-pipette and mixed thoroughly. Then, the treated seeds were kept in different  
52 containers (metal box, cloth bag, and plastic zippling bag) in the laboratory under ambient conditions.  
53 The total numbers of treatments were 48 with three replications.

54 The experiment consisted of two factors (three different packing materials as storage container were  
55 used as level factor "C" and the sixteen fungicides treatments were used as the level factor "T") were  
56 laid out in completely randomized design (CRD). Seeds were taken from each of the different  
57 containers at quarterly intervals up to twelve months and observations were recorded for seed  
58 technological parameters viz., electrical conductivity and dehydrogenase activity test.

#### 59 **Electrical Conductivity Test**

60 The electrical conductivity of the seed leachates was measured to know the status of membrane  
61 permeability as per ISTA [4]. For this, 50 seeds selected randomly replicated thrice from each seed lot  
62 were soaked in separate beakers each containing 75 ml of distilled water. The seeds were immersed  
63 completely in water and beakers were covered with the foil. Thereafter, these samples were kept in  
64 the germinator at 25±1°C for 24 h. The electrical conductivity of seed leachates was measured by 60  
65 direct reading conductivity meter. The conductivity was expressed in µS/cm/g.

Comment [H4]: EC 60 or PC 60 ?

Comment [H5]: ?

#### 66 **Dehydrogenase activity (DHA) Test (OD g<sup>-1</sup> ml<sup>-1</sup>)**

67 The method was suggested by Kittock and Law [5]. To conduct the DHA test, the representative seed  
68 samples of treatments, replicated thrice were grounded to pass through the 20-mesh screen. The 200

69 mg flour was soaked in 5 ml of freshly prepared 0.5 percent triphenyl tetrazolium chloride solution  
70 having pH 7.0. After shaking, the mixture was incubated at a temperature of 38°C for 2 h. Then it was  
71 centrifuged at 10,000 rpm for 3 minutes and the supernatant was poured off. The formazan was  
72 extracted with 10 ml acetone for 16 h at room temperature. It was then centrifuged for 3 minutes at  
73 10,000 rpm and acetone solution containing formazan was transferred to the cuvette. The absorbance  
74 reading of the solution was taken at 480 nm wavelength using systronic spectrophotometer 169.  
75 These observations were expressed as change in OD g<sup>-1</sup> ml<sup>-1</sup>.  
76 The data obtained from the experiments were analyzed as per standard method [6].

### 77 3. RESULTS AND DISCUSSION

#### 78 79 CHILLI

80 As indicated in table 1 that among the fungicides, the lowest electrical conductivity was observed in  
81 the treatment with flusilazole and was followed by tebuconazole and among the containers, cloth bag  
82 was found better statistically at par with the metal box. Interaction effect of the metal box with  
83 flusilazole was found better. The results are in accordance with the earlier findings [7, 8, and 9].  
84

85 The perusal of data in table 2 indicates that the DHA values were recorded highest when seeds were  
86 treated with flusilazole which was statistically at par with tebuconazole. Among containers, plastic  
87 zipling bag which was statistically at par with cloth bag. Interaction effect of plastic zipling bag with  
88 flusilazole was found better than others. The results are in conformity with the findings [10 and 11].  
89

#### 90 BRINJAL

91 As illustrated in table 3 among the fungicides, the lowest electrical conductivity was found in the  
92 treatment with carbendazim and second lowest with tebuconazole. Among containers, plastic zipling  
93 bag was found better. Interaction effect of the metal box with carbendazim was found better. The  
94 results are similar as in the earlier findings [7, 9 and 12].  
95

96 The data in table 4 shows that the DHA values were found highest with carbendazim treatment  
97 followed by dimethomorph. Among containers, metal box proved better. Interaction effect of plastic  
98 zipling bag with carbendazim was found better than others. The results are in accordance with the  
99 findings [13 and 14].  
100

Comment [H6]: Change it to table 2

101 **Table1. Effect of seed treatments with fungicides and containers on Electrical Conductivity ( $\mu\text{S/cm/g}$ ) in chilli seeds**

Comment [H7]: ?

Treatment	3 Months				6 Months				9 Months				12 Months			
	C1	C2	C3	Mean	C1	C2	C3	Mean	C1	C2	C3	Mean	C1	C2	C3	Mean
T1	0.768	0.801	0.790	0.786	0.896	0.921	0.872	0.896	1.436	1.534	1.471	1.480	2.134	2.012	2.212	2.119
T2	0.629	0.688	0.643	0.653	0.767	0.596	0.723	0.695	0.942	1.211	0.988	1.047	1.638	1.721	1.726	1.695
T3	0.470	0.506	0.501	0.492	0.522	0.563	0.635	0.573	0.714	0.772	0.779	0.755	1.306	1.374	1.336	1.339
T4	0.529	0.543	0.578	0.550	0.734	0.735	0.716	0.728	0.883	0.972	0.921	0.925	1.627	1.724	1.624	1.658
T5	0.553	0.552	0.573	0.560	0.890	0.668	0.582	0.713	1.306	0.987	1.123	1.139	1.289	1.338	1.435	1.354
T6	0.727	0.741	0.740	0.736	0.892	0.584	0.666	0.714	1.023	0.865	0.874	0.921	1.586	1.451	1.424	1.487
T7	0.426	0.418	0.436	0.427	0.499	0.537	0.581	0.539	0.707	0.749	0.751	0.736	1.230	1.233	1.289	1.251
T8	0.643	0.608	0.585	0.612	0.595	0.653	0.755	0.668	0.768	1.321	0.883	0.991	1.339	1.449	1.344	1.377
T9	0.574	0.602	0.647	0.608	0.798	0.725	0.611	0.711	0.983	1.265	0.963	1.070	1.889	1.764	1.675	1.776
T10	0.549	0.588	0.593	0.577	0.735	0.893	0.862	0.830	0.943	0.936	1.121	1.000	1.697	1.764	1.765	1.742
T11	0.493	0.621	0.577	0.564	0.668	0.765	0.882	0.772	0.846	0.956	0.965	0.922	1.368	1.517	1.423	1.436
T12	0.426	0.668	0.618	0.571	0.584	0.752	0.898	0.745	0.780	0.894	0.972	0.882	1.993	1.901	1.987	1.960
T13	0.562	0.570	0.697	0.610	0.750	0.732	0.798	0.760	0.952	0.957	0.823	0.911	1.425	1.542	1.651	1.539
T14	0.483	0.490	0.544	0.506	0.653	0.896	0.732	0.760	0.832	0.823	0.971	0.875	1.321	1.423	1.421	1.388
T15	0.533	0.542	0.482	0.519	0.725	0.792	0.755	0.757	0.937	0.932	1.129	0.999	1.661	1.786	1.678	1.708
T16	0.488	0.490	0.438	0.472	0.602	0.874	0.767	0.748	1.098	0.956	0.998	1.017	1.424	1.543	1.423	1.463
Mean	0.553	0.589	0.590		0.707	0.730	0.740		0.947	1.008	0.983		1.558	1.596	1.588	
CD (P=0.05)	C	T	C×T		C	T	C×T		C	T	C×T		C	T	C×T	
	0.012	0.028	0.048		0.007	0.016	0.028		0.007	0.017	0.029		0.018	0.041	0.071	

102 C1: Metal box C2: Cloth bag C3: Plastic zippling bag (40 microns)  
 103 T1: Untreated (Control); T2: Carbendazim 75% WP; T3: Tebuconazole 2 DS; T4: Difenoconazole 25% EC; T5: Propiconazole 25% EC; T6: Tricyclazole 75% WP; T7:  
 104 Flusilazole 40% EC; T8: Azoxystrobin 23% SC; T9: Kitazine 48% EC; T10: Propineb 70% WP; T11: Dimethomorph 50% WP; T12: Chlorothalonil 78.2% WP; T13:  
 105 Captan 70 % + Hexaconazole 5% WP; T14: Carbendazim 12 % + Mancozeb 63 % WP; T15: Famoxadone 16.6 % + Cymoxanil 22.1 % SL; T16: Flusilazole 12.5 % +  
 106 Carbendazim 25 % SE  
 107  
 108

109 **Table 2. Effect of seed treatments with fungicides and containers on Dehydrogenase Activity (OD g<sup>-1</sup> ml<sup>-1</sup>) in chilli seeds**

Treatment	3 Months				6 Months				9 Months				12 Months			
	C1	C2	C3	Mean	C1	C2	C3	Mean	C1	C2	C3	Mean	C1	C2	C3	Mean
T1	0.340	0.329	0.331	0.333	0.271	0.232	0.262	0.255	0.218	0.210	0.230	0.219	0.104	0.101	0.107	0.104
T2	0.351	0.320	0.307	0.326	0.267	0.278	0.265	0.27	0.229	0.222	0.165	0.205	0.127	0.121	0.121	0.123
T3	0.378	0.364	0.370	0.371	0.298	0.273	0.276	0.282	0.253	0.261	0.253	0.256	0.163	0.179	0.190	0.177
T4	0.317	0.314	0.340	0.324	0.278	0.271	0.267	0.272	0.235	0.240	0.245	0.240	0.112	0.114	0.132	0.119
T5	0.347	0.345	0.360	0.351	0.281	0.268	0.298	0.282	0.218	0.231	0.251	0.233	0.133	0.135	0.143	0.137
T6	0.299	0.309	0.300	0.303	0.267	0.265	0.251	0.261	0.202	0.241	0.192	0.212	0.127	0.129	0.114	0.123
T7	0.396	0.379	0.384	0.386	0.296	0.289	0.288	0.291	0.276	0.270	0.271	0.272	0.182	0.197	0.198	0.192
T8	0.337	0.324	0.312	0.324	0.259	0.276	0.271	0.269	0.198	0.213	0.231	0.214	0.113	0.139	0.120	0.124
T9	0.343	0.319	0.341	0.334	0.267	0.261	0.267	0.265	0.195	0.199	0.234	0.209	0.109	0.131	0.110	0.117
T10	0.302	0.309	0.321	0.311	0.268	0.257	0.269	0.265	0.237	0.221	0.215	0.224	0.107	0.129	0.146	0.127
T11	0.358	0.304	0.353	0.338	0.272	0.275	0.251	0.266	0.221	0.219	0.237	0.226	0.119	0.121	0.118	0.119
T12	0.315	0.299	0.327	0.314	0.273	0.28	0.266	0.273	0.231	0.227	0.219	0.226	0.108	0.112	0.112	0.111
T13	0.298	0.320	0.301	0.306	0.274	0.277	0.278	0.276	0.229	0.211	0.211	0.217	0.079	0.117	0.132	0.109
T14	0.295	0.354	0.348	0.332	0.263	0.244	0.261	0.256	0.203	0.205	0.201	0.203	0.097	0.127	0.110	0.111
T15	0.317	0.355	0.311	0.328	0.275	0.269	0.245	0.263	0.212	0.209	0.199	0.207	0.109	0.102	0.143	0.118
T16	0.313	0.316	0.302	0.310	0.267	0.278	0.277	0.274	0.219	0.229	0.213	0.220	0.119	0.105	0.113	0.112
Mean	0.332	0.329	0.332		0.273	0.268	0.268		0.224	0.226	0.223		0.119	0.129	0.132	
CD (P=0.05)	C	T	C×T		C	T	C×T		C	T	C×T		C	T	C×T	
	0.006	0.015	0.026		0.007	0.018	0.021		0.008	0.018	0.002		0.007	0.016	0.002	

110 C1: Metal box C2: Cloth bag C3: Plastic zipling bag (40 microns)  
 111 T1: Untreated (Control); T2: Carbendazim 75% WP; T3: Tebuconazole 2 DS; T4: Difenconazole 25% EC; T5: Propiconazole 25% EC; T6: Tricyclazole 75% WP; T7:  
 112 Flusilazole 40% EC; T8: Azoxystrobin 23% SC; T9: Kitazine 48% EC; T10: Propineb 70% WP; T11: Dimethomorph 50% WP; T12: Chlorothalonil 78.2% WP; T13:  
 113 Captan 70 % + Hexaconazole 5% WP; T14: Carbendazim 12 % + Mancozeb 63 % WP; T15: Famoxadone 16.6 % + Cymoxanil 22.1 % SL; T16: Flusilazole 12.5 % +  
 114 Carbendazim 25 % SE  
 115  
 116

117 **Table 3. Effect of seed treatments with fungicides and containers on Electrical Conductivity ( $\mu\text{S}/\text{cm}/\text{g}$ ) in brinjal seeds**  
 118

Treatment	3 Months				6 Months				9 Months				12 Months			
	C1	C2	C3	Mean	C1	C2	C3	Mean	C1	C2	C3	Mean	C1	C2	C3	Mean
T1	0.321	0.303	0.319	0.314	0.536	0.602	0.587	0.575	0.834	0.927	0.865	0.875	1.040	0.998	1.090	1.043
T2	0.196	0.190	0.200	0.195	0.394	0.395	0.389	0.392	0.458	0.493	0.457	0.470	0.712	0.702	0.690	0.701
T3	0.288	0.301	0.293	0.294	0.446	0.502	0.482	0.477	0.544	0.596	0.597	0.579	0.743	0.756	0.842	0.780
T4	0.311	0.246	0.237	0.265	0.390	0.410	0.401	0.400	0.591	0.574	0.658	0.608	0.844	0.843	0.919	0.869
T5	0.233	0.222	0.377	0.277	0.394	0.455	0.435	0.428	0.640	0.621	0.762	0.674	0.932	0.931	0.994	0.952
T6	0.298	0.231	0.271	0.267	0.471	0.501	0.492	0.488	0.584	0.576	0.721	0.627	0.783	0.782	0.839	0.801
T7	0.206	0.253	0.248	0.236	0.415	0.434	0.415	0.421	0.613	0.612	0.546	0.590	0.834	0.838	0.798	0.823
T8	0.305	0.282	0.201	0.263	0.490	0.515	0.498	0.501	0.498	0.509	0.578	0.528	0.896	0.894	0.884	0.891
T9	0.219	0.219	0.244	0.227	0.433	0.466	0.470	0.456	0.508	0.578	0.509	0.532	0.772	0.771	0.913	0.819
T10	0.282	0.299	0.288	0.290	0.358	0.411	0.398	0.389	0.572	0.546	0.612	0.577	0.843	0.842	0.897	0.861
T11	0.253	0.302	0.311	0.289	0.393	0.434	0.414	0.414	0.516	0.721	0.576	0.604	0.921	0.919	0.837	0.892
T12	0.300	0.288	0.300	0.296	0.423	0.456	0.426	0.435	0.730	0.762	0.621	0.704	0.994	0.965	0.784	0.914
T13	0.222	0.261	0.212	0.232	0.419	0.554	0.504	0.492	0.742	0.658	0.574	0.658	0.838	0.837	0.932	0.869
T14	0.246	0.219	0.264	0.243	0.444	0.496	0.462	0.467	0.688	0.723	0.964	0.792	0.798	0.799	0.844	0.814
T15	0.301	0.206	0.200	0.236	0.476	0.432	0.402	0.437	0.701	0.598	0.672	0.657	0.884	0.885	0.743	0.837
T16	0.277	0.233	0.291	0.267	0.418	0.546	0.455	0.473	0.586	0.645	0.821	0.684	0.912	0.913	0.986	0.937
Mean	0.266	0.253	0.266		0.431	0.476	0.452		0.613	0.634	0.658		0.859	0.855	0.875	
CD (P=0.05)	C	T	C×T		C	T	C×T		C	T	C×T		C	T	C×T	
	0.007	0.004	0.002		0.013	0.03	0.052		0.007	0.016	0.028		0.007	0.015	0.026	

119 C1: Metal box C2: Cloth bag C3: Plastic zippling bag (40 microns)  
 120 T1: Untreated (Control); T2: Carbendazim 75% WP; T3: Tebuconazole 2 DS; T4: Difenconazole 25% EC; T5: Propiconazole 25% EC; T6: Tricyclazole 75% WP; T7:  
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 123 Carbendazim 25 % SE  
 124  
 125

**Table 4.** Effect of seed treatments with fungicides and containers on Dehydrogenase Activity ( $\text{OD g}^{-1} \text{ml}^{-1}$ ) in brinjal seeds

Treatment	3 Months				6 Months				9 Months				12 Months			
	C1	C2	C3	Mean	C1	C2	C3	Mean	C1	C2	C3	Mean	C1	C2	C3	Mean
T1	0.410	0.400	0.390	0.400	0.35	0.33	0.34	0.34	0.296	0.240	0.210	0.249	0.160	0.154	0.149	0.154
T2	0.488	0.496	0.484	0.489	0.379	0.404	0.419	0.401	0.283	0.294	0.284	0.287	0.198	0.190	0.204	0.197
T3	0.460	0.431	0.457	0.449	0.35	0.342	0.3	0.331	0.230	0.230	0.267	0.242	0.155	0.118	0.163	0.145
T4	0.430	0.421	0.428	0.426	0.309	0.302	0.342	0.318	0.238	0.220	0.230	0.229	0.142	0.140	0.159	0.147
T5	0.420	0.450	0.420	0.430	0.324	0.318	0.323	0.322	0.258	0.240	0.272	0.257	0.174	0.172	0.148	0.165
T6	0.452	0.420	0.410	0.427	0.341	0.332	0.341	0.338	0.212	0.243	0.212	0.222	0.166	0.161	0.139	0.155
T7	0.432	0.410	0.387	0.410	0.328	0.343	0.327	0.333	0.202	0.238	0.251	0.230	0.170	0.166	0.162	0.166
T8	0.452	0.460	0.389	0.434	0.31	0.311	0.314	0.312	0.198	0.241	0.236	0.225	0.172	0.152	0.154	0.159
T9	0.450	0.420	0.419	0.430	0.312	0.361	0.302	0.325	0.190	0.213	0.229	0.211	0.147	0.147	0.172	0.155
T10	0.432	0.430	0.399	0.420	0.329	0.347	0.312	0.329	0.228	0.267	0.251	0.249	0.167	0.166	0.159	0.164
T11	0.416	0.430	0.466	0.437	0.348	0.311	0.321	0.327	0.230	0.238	0.221	0.230	0.162	0.186	0.168	0.172
T12	0.451	0.421	0.405	0.426	0.36	0.323	0.315	0.333	0.240	0.271	0.243	0.251	0.171	0.181	0.157	0.170
T13	0.412	0.394	0.387	0.398	0.317	0.322	0.325	0.321	0.242	0.278	0.231	0.250	0.168	0.154	0.175	0.166
T14	0.420	0.387	0.433	0.413	0.301	0.328	0.349	0.326	0.251	0.268	0.254	0.258	0.151	0.167	0.158	0.159
T15	0.418	0.412	0.437	0.422	0.309	0.356	0.337	0.334	0.238	0.271	0.211	0.240	0.162	0.159	0.156	0.159
T16	0.420	0.456	0.401	0.426	0.342	0.329	0.317	0.329	0.222	0.217	0.198	0.212	0.149	0.170	0.167	0.162
Mean	0.435	0.427	0.420		0.332	0.335	0.330		0.235	0.248	0.238		0.163	0.160	0.162	
CD (P=0.05)	C	T	C×T		C	T	C×T		C	T	C×T		C	T	C×T	
	0.009	0.02	0.035		0.008	0.012	0.021		0.009	0.022	0.038		0.007	0.019	0.021	

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C1: Metal box C2: Cloth bag C3: Plastic zipling bag (40 microns)

T1: Untreated (Control); T2: Carbendazim 75% WP; T3: Tebuconazole 2 DS; T4: Difenconazole 25% EC; T5: Propiconazole 25% EC; T6: Tricyclazole 75% WP; T7: Flusilazole 40% EC; T8: Azoxystrobin 23% SC; T9: Kitazine 48% EC; T10: Propineb 70% WP; T11: Dimethomorph 50% WP; T12: Chlorothalonil 78.2% WP; T13: Captan 70 % + Hexaconazole 5% WP; T14: Carbendazim 12 % + Mancozeb 63 % WP; T15: Famoxadone 16.6 % + Cymoxanil 22.1 % SL; T16: Flusilazole 12.5 % + Carbendazim 25 % SE

133 **CONCLUSION**

134 On the basis of present investigation, it is concluded that the electrical conductivity of seeds increases  
135 and dehydrogenase activity of seeds decreases with the passage of time respectively. The seeds  
136 treated with flusilazole and carbendazim (2g kg<sup>-1</sup> seed) in case of chilli and brinjal and stored in metal-  
137 box were found better for maintenance of higher seed quality parameters [electrical conductivity and  
138 dehydrogenase activity]. The study also suggested that use of appropriate packaging material and  
139 seed treatment could be useful to prolong the storage life of chilli and brinjal seeds.

140 **COMPETING INTERESTS**

141  
142 Authors have declared that no competing interests exist.  
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