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Short Communication

Effect of Post Extraction Treatments on Quality of Brinjal Seed

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Physiological and pathological problems are known to cause seed deterioration during storage [1]. We have encountered similar problem, many a times, with brinjal seed under Punjab conditions, where wet seed extraction is carried out during winters. As a result, the seed loses its germination and vigour so fast that it will not meet even the minimum seed certification standards by the commencement of next sowing season. The mycoflora studies conducted on such seed encountered a high incidence of storage fungi which is probably associated at the time of extraction of the seed. Keeping this in mind, preliminary investigations were carried out for enhancing and upgrading the seed quality through physical and chemical post-extraction seed treatments.

The experiment was conducted during *kharif* 2002-03. Brinjal (cv. Jamuni Gola) crop was raised in the *kharif* season. During these years the fruits at maturity were picked up in the month of January. Seed extraction was carried out manually as per conventional method by separating the pulp and seed in the water (within a day of picking). The extracted seed was subjected immediately to the following soaking treatments:

(1) Hot water at 50°C for 30 min
(2) 0.5 per cent sodium hyprochlorite for 30 min
(3) 0.5 citric acid for 45 min
(4) 0.25 per cent HCl for 30 min
(5) 0.5% liquid ammonia - a quick dip
(6) Control (No treatment)

After the completion of the treatments the seeds were dried in a hot air drier at 40±2°C for four hours. The quality of the seeds was estimated in terms of germination, seedling growth, seedling length, speed of germination, field emergence and seed mycoflora as per the ISTA rules [2].

Among different treatments evaluated, sodium hypochlorite ($NaOCl_3$) and hot water treatments proved unexpectedly very promising and enhanced and upgraded the seed quality significantly to a very high level as compared to other treatments (Table 1). As far as the field emergence and seed mycoflora (*Fusarium moniliforme*, *Aspergillus* spp and *Colletotrichum* spp) is concerned, the $NaOCl_3$ outclassed all other treatments showing 93.0 per cent seed emergence and complete control of seed mycoflora. It is obviously the result of very strong antimicrobial effect of $NaOCl_3$ which is commonly used as a surface sterilent for all seed pathology studies [3]. Though the NH_4OH also exhibited high seed germination and field emergence but it failed to control the seed mycoflora. Citric acid and HCl treatments probably proved phytotoxic to seed as indicated by reduced germination capacity, field emergence and vigour parameters. Interestingly the field emergence was found to be higher than the seed germination recorded in the laboratory. This might be influenced by the quality of papers or the soil could have been better substrate for the germination of brinjal seed or seed dormancy. Pre- and post-storage, physical and chemical treatments have been reported by many workers for maintaining the seed longevity and planting value of seed in many crops [4-9]. The efficacy of such treatments should also be studied in other vegetable crops too.

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Table 1. Effect of post extraction seed treatments on seed germination, vigour and mycoflora during 2002-03.

Treatment	Per cent Germination	Seedling length	Speed of germination	Field emergence (%)	*Fusarium moniliforme* (%)	*Aspergillus* sp. (%)	*Colletotrichum* sp. (%)	Total percentage of pathogens (%)
Control	57.0	45.33	28.5	74.33	22.66	3.00	1.33	26.99
HCl (25%)	66.0	49.00	26.9	70.66	0.00	0.00	0.00	0.00
NaOCl	82.0	46.66	39.0	93.00	0.00	0.00	0.00	0.00
Hot water	84.7	50.33	34.4	84.33	4.00	4.00	1.33	9.33
Citric acid	55.3	46.66	19.1	66.66	4.66	3.66	0.00	8.32
NH_4OH	80.7	44.00	37.3	73.66	16.00	3.33	2.66	21.99
CD (0.05)	2.59	3.79	1.85	4.86	4.58	1.73	NS	

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