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Evaluation of Seed Health Status of Some Selected Vegetables

Tanzina Afrin*

Agricultural Botany Experimental Field of Sher-e-Bangla Agricultural University, Sher-e-Bangla Nagar, Dhaka, Bangladesh

Abstract

Seed health status of eight vegetable crops viz. spinach, Indian spinach, bottle gourd, sweet gourd, sponge gourd, country bean, yard long bean and radish collected from three different seed sources (Maithili Seed Enterprise, Alo Bij Vander, Bismillah Seed Store) were determined. The experiment was conducted in Seed health Laboratory (SHL), Sher-e-Bangla Agricultural University, Dhaka during 2015. Two seed health testing methods viz inspection of dry seed and blotter method were followed. By inspection of dry seed farmer usually get primary idea about the seed quality of loose vegetables by observing visuially. On the other hand, blotter method is the most acceptable methods of seed health testing and using world wide poputarity, as most of the seed borne pathogen can be easily identified by this method. Prevelance of seed borne fungi of defferent vegetables recorded both inspection of dry seed and blotter method varied significantly depending on seed categorys and seed sources. Among three seed sources, each source mention that their seeds purity percentages and total seed borne fungal infections. For inspection of dry seed, present study mention that in every case seeds collected from Alo Bij Vander showed the lowest pure seed percentages except spinach, sweet gourd, sponge gourd where seed collected from Bismillah Seed Enterprise gave highest pure seed percentages for Indian spinach, bottle gourd, country bean, yard long bean and radish. In all cases seed collected from Mithila Seed Store gave an average result for all loose vegetable seeds. On inspection of dry seed, highest pure seed percentages were found in radish (98.5%) which was collected from Bismillah Seed Enterprise and the lowest pure seed percentages were found in country bean (85%) which was collected from Alo Bij Vander. Out of the tested seeds of eight vegetable crops, altogether 11 pathogens were detected. The recorded fungi were *Aspergillus flavus*, *Aspergillus niger*, *Chaetomium* sp., *Rhizopus* spp., *Alternaria* sp., *Nigrospora* sp., *Bipolaris* sp., *Fusarium* sp.,*Sclerotia* sp., Unidentified fungi and Unidentified bacterium. Out of all these fungi, seven fungi detected on leafy vegetable seeds, in order of prevalence were *Chaetomium* sp., *Fusarium* spp., *Aspergillus flavus*, *Nigrospora* sp., unidentified fungi, *Rhizopus* spp, *Bipolaris* sp. and *Aspergillus niger*. Six fungi were recorded in cucurbits of prevalence were *Fusarium* spp., *Aspergillus flavus*, *Aspergillus niger*, *Chaetomium* sp., *Rhizopus* spp. and *Nigrospora* sp. In case of root vegetables five fungi were encountered in order of prevalence were *Aspergillus flavus*, *Aspergillus niger*, *Chaetomium* sp., *Rhizopus* spp. and *Fusarium* sp. Six fungi recorded in podded vegetables, in order of prevalence were, *Aspergillus flavus, Aspergillus niger, Rhizopus* spp., *Fusarium* sp., *Chaetomium* spp. and *Alternaria* sp. In case of blotter method, present study mention that in every case seed collected from Alo Bij Vander showed the highest value seed borne fungal infection for spinach, Indian spinach, bottle gourd, sweet gourd, country bean, radish where Bismillah Seed Store gave lowest total seed borne fungal infections . In all cases seed collected from Mithila Seed Store gave an average result for all loose vegetable seeds. For sponge gourd and yard long been all seed sources gave similar result. The prevalence of seed borne fungi was highest in country bean and the prevalence of seed borne fungi were lowest in Indian spinach, bottle gourd, yard long bean and radish. Considering the overall findings, it was revealed that the seed health status of loose seed of vegetables was not at satisfactory level. However, further study will need to be carried out with more representative seed samples of these vegetable crops collected from Siddik Bazaar, Dhaka in order to unveil the exact picture of seed health of the seed marked by different seed sources.

***Corresponding author:** Tanzina Afrin, Agricultural Botany Experimental Field of Sher-e-Bangla Agricultural University, Sher-e-Bangla Nagar, Dhaka, Bangladesh, Tel: 01770190571; Email: afrint@yahoo.com

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