

PREVALENCE AND TRANSMISSION OF SEED BORNE PATHOGENS OF SOME SELECTED HYBRID MAIZE VARIETIES CULTIVATED IN BANGLADESH AND THEIR MANAGEMENT

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Extended Summary

An Experiment was conducted to know the seed health status of three selected hybrid maize varieties viz. Dekalb, Miracal and NK-40 during the period July 2013 to August 2014 at the Department of Plant Pathology, Sher-e-Bangla Agricultural University, Dhaka, Bangladesh. Seed health study was conducted following blotter method, water agar test tube method and rolled paper towel method. It was revealed that seeds of selected maize varieties yielded three fungal species in blotter method. The fungi were *Aspergillus flavus* (7.42% in NK-40, 5.95% in Miracal and 2.24% in Dekalb), *Aspergillus niger* (7.32% in NK-40, 6.98% in Miracal and 4.22% in Dekalb) and *Fusarium moniliforme* (5.75% in NK-40, 4.42% in Miracal and 3.42% in Dekalb). In seedling symptoms test by water agar test tube method and seedling vigor index test by rolled paper towel method, maize variety Dekalb showed good performance in terms of minimum number of diseased seedlings (15.26%) and dead seed (2.00%) and maximum germination (97.25%) and showed the highest vigor index (1437) while the variety NK-40 showed poor performance regarding all parameters used. The incidence of different seed borne fungi were found to vary individually and independently among the hybrid variety. *A. flavus*, *A. niger* (7.32%) and *F. moniliforme* (5.75%) were noticed in NK-40. In water agar test tube method, the highest seed germination (98%) was found in Dekalb. The maximum number of abnormal seedlings (8.83%) were found in NK-40. The highest diseased seedlings (18.73%) were recorded from NK-40. The highest percentage of dead seed was recorded from NK-40. In rolled paper towel method, the maximum number of seed germination (97.25%), highest vigor index (1437) and the minimum number of abnormal seedlings (18.09%) were recorded from Dekalb. The maximum number of abnormal seedlings (23.02%), dead seed (6.25%), and lowest vigor index 1153 were found in NK-40. So, most of the seed-borne pathogens reduced the germination and produced diseased seedlings. The present experiment showed that a number of seed-borne pathogens were found associated with hybrid maize seeds though the hybrid maize seeds were treated with fungicides. Seed-borne fungi appeared may be due to improper management of maize seeds in storage.

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Considering the overall findings, it was revealed that the seed health status of hybrid maize seeds is not satisfactory. Farmers are therefore advised to collect the seeds from reliable sources and check their seed health status before sowing in the main field.