

Effect of harvest stage and drying methods on germination and seed-borne fungi of maize (*Zea mays* L.) in South West Nigeria

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Abstract

Germination of seed and infection by seed-borne fungi of two maize varieties DMRLSR-W and DMRLSRY as affected by stage of harvest and method of drying were studied in the growing seasons of year 2002 and 2003 at the Institute of Agricultural Research and Training, Moor Plantation, Ibadan, Nigeria. The experiment was a split-plot arranged in a randomized complete block design with four replications. Ears were harvested at 30, 35, 40, and 45 days after tasselling (DAT). Extracted seeds were dried to 13-14% moisture content (i) in shade, (ii) in sun, and (iii) artificially at 45°C in a Thermax batch type seed drier. "Initial" and "final" germination tests were conducted immediately after harvest and drying, respectively. Significant higher percentage germination was associated with seeds from cobs harvested 35 DAT which were sun dried. The highest 100-seed weight was recorded in seeds from cobs harvested 45 DAT irrespective of drying method. Associated fungi were isolated by planting seeds on potato dextrose agar. Results indicated seeds from ears harvested at 30 and 35 DAT irrespective of drying method were not infected with *Fusarium moniliforme*, *Fusarium graminearum*, *Botryodiplodia theobromae* and *Drechslera maydis*. However, seed germination was significantly lower for seeds from ears harvested at 30 DAT. *Aspergillus* sp. were isolated from all the seeds irrespective of stage of harvest and drying method. *Penicillium* sp. was not isolated from any of the seeds dried artificially. Significant higher percentage germination was associated with seeds from cobs harvested 35 DAT which were sun dried. Maximum 100-seed weight was recorded in seeds from ears harvested 45 DAT irrespective of drying method.

Key words: Seed-borne, fungi, harvest, stage, drying, germination, *Zea mays*.