

Title Role of insects in the propagation of mycotoxigenic fungi in stores in Benin.
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Citation Advances in stored product protection. Proceedings of the 8th International Working Conference on
Stored Product Protection, York, UK, 22-26 July 2002 (2003); 330-338

Abstract

With their movement, maize storage pests transmit moulds harmful to human and animal health. The aim of the present work was to study the immigration and the dynamics of storage pests in traditional African maize granaries during six months of storage, and the fungal spectrum associated with these insects. In the field, maize ears were protected with gauze just after pollination. After harvest, they were stored, with non-protected ears used as the control. Thirty ears were sampled monthly from September 2000 to March 2001. The granaries were wrapped with a plastic wire netting impregnated with neutral glue (Tanglefoot) to capture pests immigrating towards stored maize ears. Eight different insect species were identified: *Prostephanus truncatus*, *Sitophilus zeamais*, *Cathartus quadricollis*, *Carpophilus* spp., *Tribolium* spp., *Palorus* spp., *Gnatoceerus* spp. and *Cryptolestes ferrugineus*. During the six months of storage, *P. truncatus* was not observed on maize protected in the field, while after three months of storage non-protected maize was infested. *Sitophilus* numbers on protected maize ears were lower than on non-protected maize ears. Only *Cathartus* was more abundant than *P. truncatus*, peaking after three months of storage. Nine fungal species were associated with the storage insects. On non-protected ears the genus *Fusarium* (36.05%) was most frequently identified, followed by *Penicillium* (23.50%), *Rhizoctonia* (5.65%) and *Aspergillus* (3.95%). On protected ears, *Rhizoctonia* was most frequent (16.76%), followed by *Fusarium* (16.62%), *Penicillium* (8.24%) and *Aspergillus* (2.33%). The toxigenic species encountered were *A. flavus*, *A. parasiticus* and *F. verticillioides*. *Cathartus* appeared to carry more fungi towards the store, mainly *Penicillium* (51.47%), *Aspergillus* (46.56%) and *Fusarium* (32.01%). The second most important vector was *Sitophilus*. Storage pests, in particular *Cathartus* and *Sitophilus*, play an important role in the contamination of foods with moulds, especially those that produce toxins.