

**Title** Natural infection of cowpea (*Vigna unguiculata* (L.)Walp.)by toxigenic fungi and mycotoxin contamination in Benin, West Africa

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### Abstract

Natural infection of cowpea by toxigenic fungi and mycotoxin contamination in Benin, West Africa were studied. Cowpea samples were collected at harvest ( $T_0$ ) and after three months of storage ( $T_3$ ) from the four agro-ecological zones of the country. A total of 92 representative samples were analysed for the two periods. About 23 fungal species were identified on cowpea seed samples across zones of which *Aspergillus flavus*, a fungus that produces aflatoxins, was most frequently encountered. *Fusarium* species shown to produce fumonisins were not recorded from cowpea seeds. Overall incidence of *A. flavus*infection was found to increase after storage from 7.6% at  $T_0$  to 28.25% at  $T_3$ . In spite of this natural infection of cowpea, very low levels of fumonisin and aflatoxin were detected. Only three out of the 92 cowpea samples, all collected at  $T_0$ , were found to be fumonisin B<sub>1</sub> positive with a mean level of 0.03 µg/g. Similarly, only six samples out of the 92, all collected at  $T_3$ , were aflatoxin B<sub>1</sub> positive with mean levels of 3.58 µg/kg. Fumonisin (B<sub>2</sub> and B<sub>3</sub>) and aflatoxin (B<sub>2</sub>, G<sub>1</sub> and G<sub>2</sub>) were not detected in any of the samples. Contrary to the situation with maize and groundnut where high levels of toxin are often detected in naturally infected samples, the current results indicate that cowpea is less susceptible to mycotoxin contamination. A low susceptibility could be due to the presence in cowpea of substances that inhibit mycotoxin biosynthesis. Further investigations are underway to confirm this hypothesis.