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Category	: International Rice Research Conference
Select Theme	: Pathways to health and nutrition
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Keyword 1	: Food safety
Keyword 2	: Healthy food systems
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Title of Entry	: Fumonisin, Zearalenone and Aflatoxin concentration in rice from some sites in Africa as affected by processing type, burnt scallop shell treatment and storage duration.
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Select only one type of presentation	: 15 minute oral presentation
Abstract	: Rice has a potential risk to be contaminated by mycotoxin as do other food crops. However, information on the mycotoxin contamination of rice in Africa is quite limited. In this study, milled rice samples (both parboiled rice and non-parboiled white rice) processed by local actors with sub-optimal methods were collected and their mycotoxin—Fumonisin, Zearalenone and Aflatoxin—concentrations were determined. Three locations, Glazoue (Benin) in the Guinea Savanna, Ndop (Cameroon) in the Tropical Forest and Dagana (Senegal) in the Sahel, were selected for the sample collection. In addition, subset of the samples collected were stored for three months under room conditions in the respective climate zones with and without calcium oxide (burnt scallop shell, 0.1% to milled rice on a weight basis) added and the effect of storage on the mycotoxin concentrations was examined. Multi-variance analysis showed that Fumonisin concentrations was affected by site and processing type while Zearalenone and Aflatoxin concentrations were affected only by site and processing type respectively. Multiple comparison test (Fisher (LSD)) showed that Fumonisin concentration where higher for samples stored for 3 months (0.31 ppm) compared to those analyzed immediately after collection (0.23 ppm). Zearalenone concentration was higher in samples from Cameroon (88.57 ppm) compared with those from Benin (0.44 ppm) and Senegal (0.34 ppm). Zearalenone concentration was higher in white rice (59.09 ppm) compared with parboiled rice samples (0.48 ppm). Aflatoxin concentration was higher in samples from Senegal (11.76 ppm) compared with those from Benin (2.33 ppm) and Cameroon (1.46 ppm). Aflatoxin concentration was higher in parboiled (7.79 ppm) compared with white rice samples (2.58 ppm). Burnt scallop shell treatment followed by an additional storage duration of 3 months had no effect on the concentration of the three assessed mycotoxins. It was thus concluded that the accumulation of mycotoxin in milled rice might be influenced by site-specific post-harvest practices.

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