

# Visualization of aflatoxigenic *Aspergillus flavus* contamination of coconut (*Cocos nucifera*) nutmeat (Copra) using ammonia treatment

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## Abstract

For many crops government regulations define mycotoxin contamination levels that reflect the primary determinants of quality, value and possible uses of crops. Quality can be raised by lowering the mycotoxin level through a remediation process. In the case of copra, the dried nutmeat of the coconut, hand sorting to remove *Aspergillus flavus*-contaminated copra is an effective remediation strategy. However, typically only about one third of *A. flavus* contaminants in plants are aflatoxigenic, so it would be useful to have a method to visually distinguish aflatoxigenic from non-aflatoxigenic *A. flavus* contamination of copra. We have applied a cultural method for identifying aflatoxigenic *A. flavus* in which ammonia exposure is used to raise the pH, changing the color of anthraquinone pigments associated with the aflatoxin biosynthetic pathway from yellow to a much more visible red. Aflatoxigenic *A. flavus* was readily differentiated from non-aflatoxigenic *A. flavus* on copra by the appearance of red color after ammonia exposure, particularly along break lines. These studies suggest ammonia exposure would be a useful addition to aflatoxin remediation practices in copra and possibly other crops.