
Aspergillus Section Nigri in Onions

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Resumo

Various fungal diseases can spoil onions in the field and post-harvest and may persist during transportation, storage and marketing. In Brazil, annual losses can reach 50%. One of the diseases is “black mold”, related to black *Aspergillus*, which is commonly found in foods. Some species of *Aspergillus* section *Nigri* are capable of producing mycotoxins, such as ochratoxin A. Ochratoxin A is considered to be nephrotoxic, teratogenic and immunotoxic. In onions, the presence of black *Aspergillus* has been reported as being responsible for the disease “black rot”, but there are no reports on the identification of these species. The aim of this work was to isolate and identify *Aspergillus* section *Nigri* species producing ochratoxin A in onions. Nineteen samples from the state of São Paulo were collected. For the isolation of fungi, direct plating on agar Dichloran 18% Glycerol (DG18) was used after disinfection with sodium hypochlorite. The toxigenic potential of the species was tested on yeast extract sucrose (YESA), extraction of the toxin by the agar plug technique and detection by thin layer chromatography (TLC). Ochratoxin A in onion samples was extracted with methanol and subjected to the cleaning step in an immunoaffinity column. The detection and quantification were performed by liquid chromatography of high efficiency with fluorescence detection. The average infection by *Aspergillus* section *Nigri* was 70%, varying from 22% to 100%, with a total of 658 isolates. Only 4 isolates were ochratoxin A producers. The onion samples were not contaminated with ochratoxin A. We conclude that onions have a high fungal contamination by these

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species, but low production and occurrence of ochratoxin A. The morphological evaluation and molecular testing of the strains are ongoing in order to confirm the *Aspergillus* section *Nigri* identity.

Palavras-Chave: Fungi, Ochratoxin A, Onion

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