

EVALUATION OF *Aspergillus carbonarius* AND *Aspergillus ochraceus* OCRATOXIN A PRODUCTION BY THIN-LAYER CROMATOGRAPHY (TLC) IN FOOD BASED AND SYNTHETIC GROWTH MEDIA

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Ocratoxin A (OTA) is a micotoxin produced by several species of filamentous fungi, especially from *Aspergillus* and *Penicillium* genus. These fungi are widely spread on tropical food and particularly resistant to high temperatures persisting the drying of grains. OTA nephrotoxicity, teratogenic potential, and immunotoxicity represent a serious risk to human and animal health. Thin-Layer Chromatography (TLC) is becoming a reliable detection alternative by its practicality, low cost, easy operation and quick results. This study objectives the verification of OTA productivity by *Aspergillus carbonarius* and *Aspergillus ochraceus* in different food based growth media. Coffee, wheat, and corn based growth media were prepared following the proportion: 30 g of food, 20 g of agar and 1000 mL of water. Yeast Extract Sucrose Agar (YES) and Malt Extract Agar (MEA), synthetic growth media, were also tested according to the manufacturer. *A. carbonarius* and *A. ochraceus* were inoculated on all growth media and incubated at 15°C and 25°C for 25 days. OTA production was measured on 5th, 15th and 25th days after incubation by Plug Agar method which a pure colony disc of each isolate was placed in equidistant points in Thin-Layer Chromatography plate. Each test took 10 µL of OTA standard solution and a mobile phase composed of toluene, ethyl acetate and formic acid (60:30:10). After elution, plates were dried inside laminar flow cabinet. OTA production was confirmed by λ 366 nm UV light Chromatovisor. *A. carbonarius* produced OTA in MEA and wheat based media at 25°C on three days of test, whereas in coffee based medium OTA was produced only on 15th day of incubation. Yet, tests at 15°C showed *A. carbonarius* OTA production in all culture media at the end of 25 days of incubation. *A. ochraceus* was not capable to synthesize OTA on any food based culture media, however it produced in MEA and YES on 25th day on both tested temperatures. Tests show a great influence of temperature, time and type of substrate on OTA production. Even these fungi were considered strong OTA producers, these factors may change their physiometabolic processes.

Key words:, *Aspergillus*, Food, Ocratoxin A, *Penicillium*

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