

Ochratoxigenic *Aspergillus* in Wine Grapes and Ochratoxin A in Wines from Northeast Brazil

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Abstract:

Ochratoxin A (OTA) is one of the common mycotoxins found in wines, and placed among the most harmful to human health. This study aims to isolate ochratoxigenic fungi from grapes, must and soil, as well as to evaluate the content of OTA in wines of the varieties Syrah and Viognier from the wine region of Vale do Submédio São Francisco (BA). For the isolation of fungi of the samples of grapes the technique of Direct Plating in medium DRBC (Dicloran Rosa Bengal Cloranfenicol) was used; and for the samples of must and soil the technique of surface scattering from serial dilutions was adopted. To obtain pure cultures, only fungi from genus *Aspergillus* that were identified through morphological characteristics and evaluated for the production of OTA through the Plug Agar Method, were selected. The levels of OTA from the wine samples were identified by means of High Performance Liquid Chromatography (HPLC). In the healthy grapes from the varieties Syrah and Viognier, no fungi from the genus *Aspergillus* were detected. In the must from the varieties Syrah nine isolates were obtained, identified as the species *A. niger* (44,4%), *A. japonicus* (33,3%) and *A. foetidus* (22,2%), with only one isolate of *A. niger* producer of OTA. From the soil, three species were identified *A. tubingensis* (16,7%), *A. aculeatus* (33,3%) and *A. foetidus* (50,0%). Three isolates of *A. carbonarius* producer of OTA were detected in already deteriorated Syrah grapes harvested in the vineyard; this may represent an important source of contamination with this mycotoxin in the final product. Among the thirteen isolates obtained, the species *A. japonicus* (76.9%), *A. niger* (15.4%) and *A. niger* aggregate (7.7%) were identified by the analysis of the Viognier variety must. From soil isolates in *A. aculeatus* (40.0%), *A. niger* aggregate (40.0%) and *A. foetidus* (20.0%) were identified. None of the isolates from the samples of the variety Viognier was ochratoxigenic. No OTA content in wine produced with these grapes was detected. This may be related to the characteristics of the wine producing process of white wine. With respect to HPLC, in the Syrah wine variety a concentration of 0,03 ng/mL OTA has been detected. This may be explained by the incidence of ochratoxigenic isolates in must and mainly in spoiled grapes.

Key words: wine, *Aspergillus*, Taxonomy, mycotoxin, grape