Mycotoxins in wine, are they a problem?

**Mycotoxins** are heat-resistant toxic secondary metabolites produced by fungi.

Ochratoxin A (OTA) is the most important in wines and other grape by-products. It was discovered by Van der Merwe & Colleagues in 1965.

**Ochratoxin A** has nephrotoxic, carcinogenic, teratogenic and immunossuppressive properties. IARC has classified it in group 2B.

**OTA producing species in wine**
*Black Aspergilli*, specially *A. carbonarius*

**Legislation:** EU Regulation (CE) 105/2010, modifying the EU Regulation (CE) 1881/2006.
MAXIMUM OTA IN WINE OF 2 μG/KG

**Real impact**
- After cereals, wine is the major source of daily OTA intake
- There is a higher OTA concentration in red wines than in white and rose wines.
- OTA contamination increases in wine from southern Europe, where the warmer climate is associated with a major incidence of *black Aspergilli*
- Special wines have the highest incidence of OTA

**Contamination control**
- Identify regions more likely to be contaminated by OTA.
- Avoid damaged grapes
- Antifungal agents
- Use of pesticides
- Biocontrol
- Cold storage of grapes
- Flash pasteurisation of must
- Adding sulfites
- Use of fining agents
- APPCC

**OTA**
Very important in food safety!

<table>
<thead>
<tr>
<th>Trichotecin</th>
<th>Fumonisins</th>
<th>Patulin</th>
<th>Citrinin</th>
<th>Alternariol</th>
<th>Alternariol metil ether</th>
<th>Aflatoxins</th>
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Wine may contain other mycotoxins...

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