

CHAPTER 11

FUTURE RESEARCH

- More research on OTA is needed to accurately examine the way in which this toxin play a role in the development of cancer or other diseases. Extensive research on the assessment of the extent of OTA contamination in foods and beverages in developing areas of the world is needed, since so far, the majority of the studies are carried out in developed countries.
- Studies on the regulatory genes controlling OTA biosynthesis are crucial to facilitate the research of the ways that may prevent its formation.
- Further research in fungicides, environmentally friendly, and able to solve the black aspergilli contamination in grapes would be needed, as well as the knowledge of the best doses and the time of application. In parallel, investigation of biocontrol agents should be of great interest because of their advantages facing chemical products.
- Development of rapid and reliable diagnostic tests for the detection of OTA producing isolates as well as for OTA production, both in field and in the resulting products in the different steps of the vinification process is required. Moreover, further investigation in detoxification procedures would be useful when correction actions have to be taken.
- Finally, fluorescing microscopy is a promising tool that, combined with confocal laser microscopy, will allow studying in detail the colonisation and infection of grapes by *A. carbonarius*, and possible will help in the suggestion of mechanisms to control this fungi.