Recently a species in the genus Talaromyces, a uniseriate species of Aspergillus section Nigri and an isolate each of two widespread species, Penicillium rubens and P. commune, were reported to produce ochratoxin A. This claim was based on insufficient biological and chemical data. We propose a list of criteria that need to be met before an unexpected mycotoxin producer is reported. There have only been convincing data on ochratoxin A production for Penicillium verrucosum, P. nordicum, P. thymicola, all from Penicillium series Verrucosa, and from species in three sections of Aspergillus: section Circumdati, section Nigri and section Flavi.