TAXONOMY OF *ASPERGILLUS*: INTEGRATION OF METHODS FOR NEW AND REVISITED SPECIES IN SECTION *FLAVI*

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Aspergillus is a large genus and, as with fungi in general, its taxonomy is complex and ever evolving. Section *Flavi* is one of the most significant sections of the genus, for it comprises two distinct groups of species with great interest to food industry: one group includes the aflatoxigenic species, which cause serious problems in agricultural commodities, and the other includes the non-aflatoxigenic species traditionally used in food fermentation and biotechnological processes.

Because of the significant phenotypic and genetic similarity between species, taxonomy and species identification within this section has always been subject of great interest for scientists who struggle to clarify the species concept and delimitations within the section, and to find a consistent and stable taxonomic scheme.

Throughout the last decades, the taxonomy of *Aspergillus* has evolved from a simple morphological species concept to a more complex scheme also integrating biochemical, ecological, genetic and molecular traits. Also, as methods become more sensitive, accurate and widespread, species are constantly being added or re-classified or even repositioned within the genus.

We are here in presenting a comprehensive work on the identification of large numbers of Portuguese isolates from Section *Flavi* through the combination of various methods, including morphological, biochemical and molecular ones, as well as the novel approach based on spectral analysis by MALDI-TOF-ICMS. By applying this polyphasic scheme of identification, we were able to identify and characterise three new aflatoxigenic species within this section.