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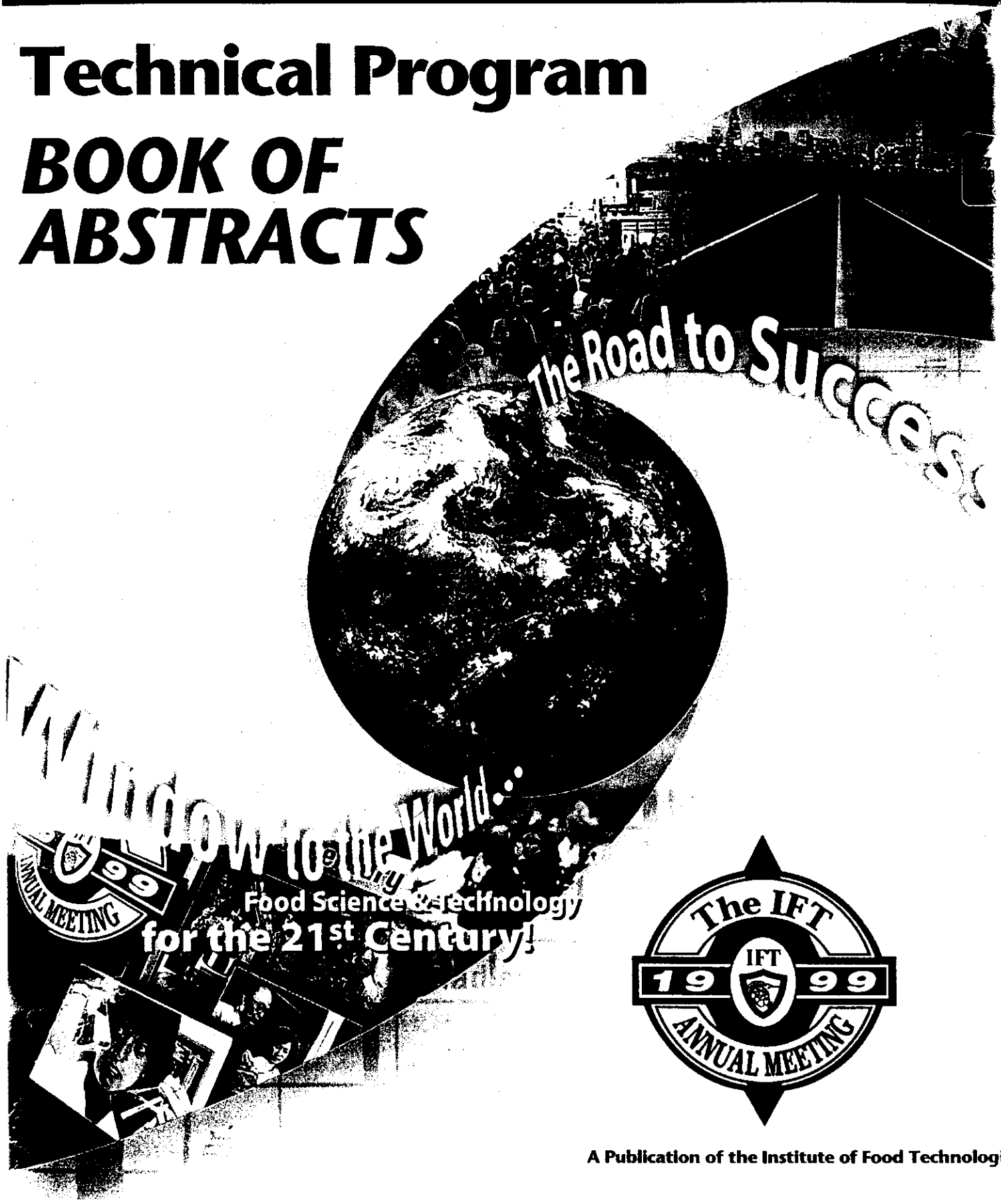
BOOK OF ABSTRACTS



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APICULATE WINE YEASTS: GROWTH KINETICS AND AROMA COMPOUNDS PRODUCTION

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The growth of non-*Saccharomyces* yeasts, mainly belonging to the genera *Hanseniaspora*, characterize the first stages of grape juice fermentation; these strains disappear during the later fermentation stages, when prevailing *Saccharomyces cerevisiae* strains complete the process. The combined action of these yeasts species determines the type and concentration of many compounds that may contribute to the aroma and flavor of wine. In this work, the growth kinetics of the yeasts *Hanseniaspora uvarum*, *Hanseniaspora guilliermondii* and *Saccharomyces cerevisiae* in commercial culture media and grape musts from the Douro region was followed. Pure and mixed yeast cultures were tested. The influence of the yeast species on the concentration of volatile compounds of the fermented media and wines, such as higher alcohols, esters and sulfur compounds, was also studied. The growth kinetics of the yeasts were followed using the viable cell count in Yeast Malt Agar medium. Volatile compounds were analyzed using Gas Chromatography. Growth of each yeast species during commercial media fermentation showed that apiculate yeasts present a stronger fermentative capacity than *Saccharomyces cerevisiae*, reaching highest cell concentrations. Using grape must, *Saccharomyces cerevisiae* keeps its activity until the end of fermentation, while apiculate wine yeasts dye off after a few days. Fermented media and wines elaborated with *Hanseniaspora uvarum* present a low content in higher alcohols and sulfur compounds. Furthermore, *Hanseniaspora guilliermondii* produces high amounts of esters (2-phenetyl acetate and isoamyl acetate) and 2-phenylethanol, when inoculated as pure or mixed cultures in commercial media and grape must. The analysis of sulfur-containing compounds showed that yeasts produce different amounts of these compounds being able to produce different compounds, according to the growth medium. By understanding the behavior of non-*Saccharomyces* yeasts we will be able to improve the control of alcoholic fermentation and therefore wine quality.