

## **Genetic instability of a commercial *Saccharomyces cerevisiae* strain**

Dorit Schuller, Hugo Alves, Brigitte Gambon, Sylvie Dequin and Margarida Casal

Centro de Biologia, Universidade do Minho, 4710-057 Braga, Portugal

Institut National de la Recherche Agronomique, UMR Sciences pour l'Oenologie, Place Viala, 34060 Montpellier, France

The usefulness of four genetic fingerprinting methods (interdelta sequence typing, mitochondrial DNA restriction length polymorphism (mtDNA RFLP), chromosomal karyotyping and microsatellite analysis) was assessed in order to detect a commercial yeast strain (Zymaflore VL1, Lallemand). From 54 spontaneous fermentations performed with grapes collected in 18 the Vinho Verde Wine Region in northwest Portugal, 101 isolates were recovered whose mtDNA RFLP were identical to strain Zymaflore VL1. Evaluation of polymorphisms was performed in comparison to 30 isolates of the corresponding original commercialized strain.

Microsatellite allelic polymorphisms were found in 12 natural isolates, two of them were characterized by complete loss of heterozygosity, whereas their chromosomal constitution showed a loss of structural heteromorphism. Major changes of chromosomal patterns were found among the natural isolates, apparent by the absence or changed position of bands in the presumable region of chromosomes VI and III. Interdelta amplification patterns depended on the primer pair used, and changes were apparent by additional bands. No correlations were found between interdelta sequence amplification patterns and chromosomal profiles or microsatellite typing patterns. The present data show that commercial yeast strains present a considerable genetic instability that can be assessed by distinct methods. Whether these changes are associated with the yeast's permanence in natural environments is subject of current investigations.

