

**Title** Screening and identification of epiphytic yeasts with potential for biological control of green mold of citrus fruits

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### Abstract

Epiphytic yeasts isolated from the surface of citrus fruits, harvested in several orchards in the Souss-Massa-Drâa Valley, Agadir, Morocco, were in vivo screened for antagonistic activity against *Penicillium digitatum*, the causal agent of green mold of citrus. From a total of 245 yeast strains assessed for their biocontrol activity against *P. digitatum*, fifteen reduced the incidence of disease to less than 50%. The effectiveness of the best selected yeast strains showed that *Pichia anomala* (YT73), *Debaryomyces hansenii* (YT22) and *Hanseniopsis guilliermondii* (YT13) were the most effective, with a reduction of green mold incidence from 65 to ~80%, compared to the control. The identification of the fifteen selected yeast strains was carried out through an integrated approach including phenotypic and genotypic (sequencing of D1/D2 domain of 26S rDNA encoding gene) methods. These 15 selected were identified as: *H. guilliermondii*, *D. hansenii*, *H. uvarum* and *P. anomala*. The study of the dynamics of two of the best strains, *H. guilliermondii* and *D. hansenii*, showed that these strains can grow rapidly, by approximately 2 log units, in citrus fruit wounds. Such rapid growth in wounds indicates that these antagonist yeasts are excellent colonizers of citrus wounds and can thrive on citrus fruits as a substrate.

<http://www.springerlink.com/content/3h6140m2h5j84759/fulltext.pdf>