

Title *Metschnikowia andauensis*: a novel biocontrol agent of fruit postharvest diseases
Author T. Manso and C. Nunes
Citation ISHS Acta Horticulturae 905:261-268.2011.
Keywords *Botrytis cinerea*; citrus fruit; mechanism of action; *Penicillium expansum*; pome fruit; *Rhizopus stolonifer*

Abstract

A new yeast antagonist, *Metschnikowia andauensis* PBC-2, isolated from apple fruit, was evaluated for its biological control activity against the most important postharvest pathogens of pome and citrus fruit. This yeast at 10^7 cfu ml⁻¹ was very effective in reducing blue mold caused by *Penicillium expansum* on different cultivars of apples and in 'Rocha' pear, and against *P. digitatum* and *P. italicum* on citrus fruit. High control of *B. cinerea*, *P. expansum* and *R. stolonifer* was obtained with the application of *M. andauensis* PBC-2 on 'Golden Delicious' apple. Over more than four years of experiments in semi-commercial trials *M. andauensis* PBC-2 provided excellent control against *P. expansum* under cold storage. The mechanisms of action, as antibiosis, production of chitinolytic enzymes and iron competition were studied. Results showed that none of these mechanisms were responsible for the antagonistic ability of *M. andauensis*. Research is now in progress to examine different media, in order to optimize large-scale production.