

**Title** *Metschnikowia andauensis* as a new biocontrol agent of fruit postharvest diseases  
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### Abstract

Potential antagonists were isolated from the epiphytic flora associated with oranges and pome fruit. A total of 1465 microorganisms were tested in a preliminary screening against blue and green moulds on pome and citrus fruit, respectively. Among them, approximately 3% reduced incidence and severity by more than 50% and 4 microorganisms fulfilled the selection criteria of reduction in severity and incidence by 75%. The most effective was a yeast identified as *Metschnikowia andauensis*, strain NCYC 3728 (PBC-2), isolated from the surface of 'Bravo de Esmolfe' apple fruit cultivated in North Portugal. The biocontrol activity of *M. andauensis* PBC-2 was dependent on its applied concentration. At  $5 \times 10^6$  cfu/mL incidence (% of infected wounds) and severity (lesion diameter) were reduced by 62 and 70%, respectively and at  $1 \times 10^7$  cfu/mL, the greatest reduction was achieved, 90% of incidence and 95% of severity. The broad spectrum of action of *M. andauensis* PBC-2 was evaluated with effective control being achieved against *Rhizopus stolonifer*, *Penicillium expansum* and *Botrytis cinerea*, on 'Rocha' pears and on different apple cultivars and against *Penicillium digitatum* and *Penicillium italicum* on mandarins and oranges. In semi-commercial trials in cold storage, the reduction of blue mould was 90%. Rapid colonization of fresh apple fruit wounds was observed during the first 24 h of cold storage, followed by a significant population increase during the first 15 days of storage and then the population remained stable until the end of storage.