IOBC/WPRS WORKING GROUPS:

Biological control of fungal and bacterial plant pathogens
Integrated control in protected crops, temperate climate
Integrated control in protected crops, mediterranean climate

Integration 2004

S. Michele all'Adige, Italy

Proceedings of a Meeting of the WGs:

Management of plant diseases and arthropod pests by BCAs and their integration in agricultural systems

at

S. Michele all'Adige, Trentino, Italy
9-13 June 2004

Edited by
Yigal Elad, Ilaria Pertot and Annie Enkegaard

IOBC wprs Bulletin
Bulletin OILB srop **Vol. 27(8) 2004**

The IOBC/WPRS Bulletin is published by the International Organization for Biological and Integrated Control of Noxious Animals and Plants, West Palearctic Regional Section (IOBC/WPRS)

Le Bulletin OILB/SROP est publié par l'Organisation Internationale de Lutte Biologique et Intégrée contre les Animaux et les Plantes Nuisibles, section Regionale Ouest Paléarctique (OILB/SROP)

Address General Secretariat:

INRA – Centre de Recherches de Dijon
Laboratoire de recherches sur la Flore Pathogène dans le Sol
17, Rue Sully, BV 1540
F-21034 DIJON CEDEX
France

ISBN 92-9067-170-8

Phenotypic traits underlying wound competence of postharvest biocontrol yeasts and degradation of mycotoxins by these microorganisms

Raffaello Castoria[1], Leonardo Caputo[2], Valeria Morena[1], Filippo De Curtis[1], Vincenzo De Cicco[1]
[1] *Department of Animal Plant and Environmental Sciences, University of Molise, Campobasso, Italy, email: castoria@unimol.it;*
[2] *Institute of Sciences of Food Production, C.N.R., Bari, Italy*

We had previously shown that wound competence of postharvest biocontrol agents (BCAs) acting against wound pathogens of apples relies on resistance of these microorganisms to reactive oxygen species (ROS: superoxide anion, O_2^- and hydrogen peroxide, H_2O_2), generated by the fruit tissue as a consequence of wounding. In this work we report the *in vitro* comparison of the enzyme activities deactivating ROS (superoxide dismutase, SOD and catalase, CAT) and the antioxidant potential of culture filtrates of two biocontrol yeast strains displaying lower (*Rhodothorula glutinis* LS11) and higher (*Cryptococcus laurentii* LS28) wound competence and antagonistic activity. The more efficient antagonist LS28 showed significantly higher SOD and CAT activities and higher antioxidant potential of its culture filtrate. Recently, the EU has released regulations (472/2002 and 1425/2003) setting the highest tolerable levels of the mycotoxins Patulin and Ochratoxin A (OTA), which contaminate apple-based food products and wine, as a consequence of infections by *Penicillium expansum* and *Aspergillus carbonarius* on apples and grape, respectively. Two biocontrol agents of our collection (strain LS11 and *Aureobasidium pullulans* LS30) are able to degrade *in vitro* Patulin and OTA, respectively. Further, strain LS11 shows active reduction of Patulin also *in vivo*, i.e. in apples artificially infected by *P. expansum*.