

## BIOTECHNOLOGICAL PROTECTION AGAINST *BOTRYTIS* BUNCH ROT ON GRAPES

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In 1989, two strains of the yeast like fungus *Aureobasidium pullulans* with antagonistic activity against *Botrytis cinerea* were isolated from untreated apple trees in Germany. The microorganism colonizes micro-scratches of grapes, which arise during fruit growth, ripening and because of friction, and compete on the fruit successfully with pathogens for nutrients and space. For both strains inclusion to Annex I (according to Directive 91/414 EEC) is expected in 2013. Meanwhile the plant protection product Botector received a provisional 3 years registration (according article 8(1)) in Austria in 2010, in France and Italy in 2012. Since 2012 a registration in USA (according to EPA) has been achieved. From 2007 to 2012, several field trials in middle and southern Europe were performed with the biotechnological botryticide, containing the active substance *Aureobasidium pullulans*. Reference substances used were standard chemical treatments (Fenhexamid, Cyprodinil, Fludioxonil). It could be demonstrated that the new product had an efficacy comparable with a twofold application of chemical botryticides. No delay of ripening and no phytotoxic reaction were detected in any trials. Spontaneous fermentation trials were performed at the University of Natural Resources and Life Sciences in Vienna, Department of Plant Protection, Prof. Dr. DI. H. Redl. Treatments with *A. pullulans* did not influence must and wine quality. Must density, sugars, acids and nitrogen in the must did not show significant differences. Furthermore, there was no influence of treatments with *A. pullulans* on the vinification: during spontaneous fermentation no difference in starting point, shape of the fermentation curve and final attenuation was observed. Compared with the untreated control there was no difference in *A. pullulans*-treated samples concerning alcohol, sugars, acids and nutrients. During professional wine tastings performed by different groups of wine producers and officials there were no negative comments on taste, smell or colour of the wines. Further a taint test with treated table grapes was performed, proving that those treatments did not influence taste of fresh table grapes. The new botryticide is suitable for integrated and organic production and can be integrated into IP-spray schedules. Botector is harmless for humans, animals and beneficials and has no harmful impact on the ecosystem, soil and groundwater. *A. pullulans* does not produce any chemical-synthetic residues and based on the antagonistic effect there is no risk for the development of resistant strains in *Botrytis cinerea*.