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that needs to be controlled. Finally, the inducible sporulation will probably reduce the dissemination of the biocontrol agent towards other sympatric ants after its application in the field.

BB-P15

DETERMINATION OF THE INCIDENCE OF GREY MOULD ON GRAPES OF SAN JUAN, ARGENTINA AFTER APPLYING DIFFERENT CONCENTRATIONS OF NATURALLY OCCURRING ANTAGONIST YEASTS

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Introduction: *Botrytis cinerea* is a major pathogen of grape. At present, control in conventional agriculture is mainly achieved through chemical strategies, which can also have many disadvantages, such as the public's growing concern for the human health conditions and the environmental pollution. One promising alternative to pesticides is the biological control, numerous studies indicated that some yeast species are ideal biocontrol agents, as they are natural plant epiphytic colonizers, nonpathogenic to plants and human beings in most cases and can rapidly proliferate. It has been reported that biological control was only effective when high concentrations of antagonist yeasts were applied. Objective: The aim of the present work was to study the efficacy of different concentrations of antagonistic yeasts in reducing the development of *B.cinerea*. Materials and Methods: A- Microorganisms: The pathogen *B.cinerea* was isolated from infected grapes. All yeast antagonists (15 strains of *Saccharomyces cerevisiae* and 1 of *Schizosaccharomyces pombe*) were originally isolated from grape surfaces and fermenting musts. They were selected because of their ability to control *B.cinerea* on grapes, screening them *in vitro* and *in vivo*. B- Tests on fruit: Biocontrol effectiveness was assessed on Red Globe grapes. The fruits were artificially wounded and inoculated with yeasts (10^5, 10^6 and 10^7 UFC/ml) and conidial suspension of *B.cinerea* (10^4 conidia/ml). Each sample, constituted by 9 berries and reproduced with three replicates for each yeast isolate, was incubated for 5 days at 25°C in a plastic box under high relative humidity (100%). After storage, the incidence of disease was analyzed in percentage and these were arcsin-transformed to angular data prior to ANOVA. Results: There were significant negative relationships between concentration of the antagonists and disease incidence (R^2: range on 0.75 to 0.99). The efficacy was higher when a concentration 10^7 CFU/ml of antagonist was used. When yeast cell suspensions of 8 strains of *S.cerevisiae* (BSc5, BSc49, BSc81, BSc92, BSc121, BSc140, BSc175 and BSc203) and *S.pombe* BSc167 reached a concentration of 10^7 CFU/ml, no infection by *B.cinerea* was found in fruits treated. Two strains of *S.cerevisiae*: BSc49 and BSc140 were able to inhibit mycelial growth of grey mould when a concentration of 10^6 CFU/ml of yeasts was inoculated. Conclusions: The concentrations of antagonist had significant effects on biocontrol effectiveness: the higher the concentration of yeast the better biocontrol activity of the antagonist had. When yeast was at 10^7 CFU/ml, the best control was obtained and this concentration was lower than those reported by other investigators.

BB-P16

BIOCONTROL OF FUNGI FROM SOUR ROT BY VOLATILES PRODUCED BY YEASTS IN TABLE GRAPES

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Introduction: Sour rot is an important disease of grapes that affects both crop yield and wine quality. It is caused by a number of undesirable yeasts and bacteria, in association with fungi like *Aspergillus*, *Penicillium* and *Rhizopus*. Biocontrol of plant diseases with microbial antagonist has been developed as an alternative to fungicides. Objective: To evaluate the action of volatiles produced by wild enological yeast in biocontrol of fungi associated to sour rot disease of grapes. Material and Methods:a- Antagonist isolation: Yeasts were isolated from different sources such as healthy grapes, fermenting musts and enological environments.b-Fungi isolation: The pathogens were isolated from grapes berries with sour rot symptoms. c- Screening of antagonistic yeasts: *In vitro*, antagonism between fungi and yeasts was observed by placing both on the same Czapeck Agar plate and incubating at 25°C, for 5 days. Then, antagonist yeasts were evaluated *in vivo*: a wound at the equator of grapes berries was made. Aliquots (10 µl) of 10^6 CFU/ml yeast concentration followed by 10µl of fungal conidial suspension (10^4 CFU/ml) were seeded in the hole. d- Production of antifungal volatiles: Interaction tests consisted of the bottom part of a Petri- dish with the seeded yeast inverted on top of another bottom part containing a fungus, were sealed with Parafilm®, and incubated at 25°C. Fungal growth inhibition was determined when the diameter of the fungi decreased in comparison to the negative control. All experiments were repeated three times. Results: *Aspergillus caelatus*, *A.carbonarius*, *A.versicolor*, *A.terreus*, *Penicillium comune*, *Rhizopus stolonifer* and *Ulocladium* sp. were isolated. The screening *in vitro* of 234 isolated