

Potential of probiotic bacteria for the control of the postharvest Disease of Strawberry caused by *Botrytis cinerea*

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Abstract:

Botrytis cinerea is a phytopathogenic fungus known popularly as gray mold, it is transmitted by air and currently it has caused serious damage to strawberry crop, impacting the culture in all development stages. The disease occurs after penetration of the fungus in the plant tissues through wounds, caused during handling or collecting. One of the most common alternatives used to control the pathogen is the use of synthetic fungicides, presenting itself as the causal agent of environmental damage and human health. Aiming to reduce this problem, the search for new strategies that have less impact on the environment has been identified as a priority, currently the biological control is emerging in agricultural systems as one of the most viable alternatives. Among the microorganisms that can act as biocontrol agents, probiotic bacteria are a favorable alternative for the control of various fungal diseases, besides, exercise beneficial effects for humans giving properties to endogenous microbiota. According to this study aims to search the biological control of the fungus *Botrytis cinerea* from probiotic bacteria. It was conducted in vitro inhibition test, using 35 strains of probiotic bacteria against phytopathogenic fungus *Botrytis cinerea*; 4 strains which showed effects on *Botrytis cinerea* causing a slower growth compared to the control plate, showing a competition for nutrients or space which is another possible mechanism of inhibition of phytopathogenic fungus of the study in question. The selected strains were characterized by FAME technique (fatty acids) and 16s rRNA sequencing. More detailed studies are needed to give evidence of such inhibition mechanisms, and the inhibitory effect that such bacteria may have *in vivo*.

Keywords: *Botrytis cinerea*, Biological Control, Probiotic