

Study of the antagonistic effect of *Bacillus* strains against *Fusarium graminearum* for the protection of durum wheat

Imen ZALILA-KOLSI

Assistant Professor, United Arab Emirates

Bacillus species are attractive due to their potential use in the biological control of fungal diseases. *Bacillus amyloliquefaciens* strain BLB369, *Bacillus subtilis* strain BLB277, and *Paenibacillus polymyxa* strain BLB267 were used to protect durum wheat (*Triticum turgidum* L. subsp. durum) cultivar Om Rabiia against *Fusarium graminearum* fungus.

In vivo examination of wheat seed germination, plant height, phenolic compounds, chlorophyll, and carotenoid contents proved the efficiency of the bacterial cells and the secreted antagonist activities. Application of single bacterial culture medium, particularly that of *B. amyloliquefaciens*, showed better protection than combinations of various culture media. The tertiary combination of *B. amyloliquefaciens*, *B. subtilis*, and *P. polymyxa* bacterial cells led to the highest protection rate which could be due to strains synergistic or complementary effects. Hence, combination of compatible biocontrol agents could be a strategic approach to control plant diseases.

Biography

Dr. Imen Zalila is an Assistant Professor in Health and Medical Sciences Department at Al Khawarizmi International College, Abu Dhabi UAE. She has achieved her PhD degree in Biological Sciences in 2016. She earned more than 7 years as a full time researcher at Centre of Biotechnology Tunisia. She has 5 years of a teaching experience both in Al Ain University of Science and Technology, College of Pharmacy, Abu Dhabi and Al Khawarizmi International College, Abu Dhabi. She supervised many research projects and published numerous research papers in academic Journals. Her research interests include Applied Microbiology, Biochemistry, Molecular Biology.