**Session IV -“Influence of environmental factors on PGPR”**

**Subtopics: Influence of abiotic factors (soil physico-chemistry, temperature, drought)**

**Oral Presentation**

**Abstract text**

**First insights on the impact of temperature on the survival and biocontrol efficacy of a member of the *Lysobacter* genus**

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Despite the high potentialofstrainsbelonging to the genus *Lysobacter* to be developed as novel biofungicides, little is known on how environmental factors may influence their ability to control plant pathogens. In order to address this issue, we studied the impact of temperature on the physiology of a specific strain, *L. capsici* AZ78, in particular on traits associated with the biocontrol efficacy of *Phytophthora infestans* and the colonization rate of tomato phyllosphere.

*L. capsici* AZ78 effectively colonizes tomato leaves and controls *P. infestans* infections when treated plants are exposed to 15 and 25°C for 24 h. Conversely, the exposure to 35 drastically reduces the persistency of living bacterial cells on tomato leaves and the biocontrol of the plant pathogenic oomycete. At 37°C the bacterium dies. The reduction in biocontrol efficacy of *L. capsici* AZ78 at 35°C could be associated with the impaired anti-oomycete and proteolytic activity recorded *in vitro* at the same temperature. Furthermore, other physiological characteristics of *L. capsici* AZ78 cells are modulated by temperature. Indeed, bacterial cells originated upon 24 h incubation at 15 and 25°C are highly resitant to UV light irradiation and copper ions, while the incubation at 35°C increases the lethal effect of both these factors.

Results obtained in this work indicate that the future applications under field conditions of *L. capsci* AZ78 should be targeted against plant diseases that occur in a temperature range of 15-25°C and avoided for the control of phytopathogens when temperature reach 35°C*.*