



# XVIII Congreso de la Sociedad Argentina de Microbiología General



**Chapadmalal**

R.C.T. Club Vacacional & Spa

2 al 5 de octubre

bioprospecting microorganisms that produce PHA with high production yields and enhanced characteristics. Our results indicate that seawater is an interesting source of microorganisms with the potential to produce PHAs.

## MS17

### BIOCONTROL OF THE PATHOGENIC FUNGUS OF STRAWBERRY

#### *Neopestalotiopsis clavispora*

Rostan Navarro, María del Mar<sup>1</sup> – Mamani, Darío<sup>1</sup> – Heredia, Ana Micaela<sup>2</sup> – Juárez, Alejandro Roger<sup>3</sup> – Kurth, Daniel<sup>3</sup>

1) *Facultad de Bioquímica, Química y Farmacia, Universidad Nacional de Tucumán - San Miguel de Tucumán - Tucumán – Argentina*

2) *Instituto Nacional de Tecnología Agropecuaria, Estación Experimental Agropecuaria Famaillá (INTA-Famaillá) – Famaillá – Tucumán – Argentina*

3) *Planta Piloto de Procesos Industriales Microbiológicos (PROIMI-CONICET) - San Miguel de Tucumán - Tucumán – Argentina*

*dkurth@conicet.gov.ar*

Fungi cause diseases that commonly lead to plant rot and wilting, and strawberries are one of the crops most attacked by fungi present in the soil. Many of them, such as *Macrophomina*, *Phytophthora* and *Fusarium*, are relevant and harmful in agriculture due to their persistence and survival. In recent years, *Neopestalotiopsis clavispora*, a fungus originally considered harmless, was confirmed as the cause of diseases in plantations of Corrientes and Tucumán. Since the disease is relatively new, known fungicides used for control are not completely effective and there are no established strategies to control the disease caused by *N. clavispora*. The general objective of this work is to provide alternatives for biocontrol. New trends in crop protection are oriented towards a reduction in the dependence on conventional pesticides, which increases the interest in effective and sustainable alternative strategies.

Bacteria, yeast and fungi were isolated from soil obtained from a strawberry patch in INTA-Famaillá. Rows associated with three different varieties of strawberries were sampled, in the rhizosphere and leaves of healthy plants. Samples were diluted in sterile physiological solution, and serial dilutions were plated in Petri dishes with Potato Dextrose Agar (PDA) medium supplemented with chloramphenicol for fungi or Luria Bertani (LB) medium for bacteria. Eighty isolates were obtained, including 65 bacteria and 15 fungi. They were evaluated against the pathogen *N. clavispora* using the dual culture method and selected candidates were further analysed.

Candidates with inhibitory activity in the dual cultures were identified by molecular techniques. DNA was extracted using a commercial kit and PCR amplification was performed from the extracted DNA. For bacteria, the 16S gene was amplified, and for fungi, a fragment of the ITS region was amplified. The amplicons obtained were sent to a commercial supplier for sequencing. The identified organisms included *Bacillus* sp. and *Trichoderma* sp. Plant growth promotion assays were performed *in vitro*. These included siderophore production, production of total indoles, and phosphate solubilisation. Most strains produced indoles and solubilized phosphates *in vitro*, however, siderophore production was not detected. Candidates were also evaluated in dual cultures against the main strawberry fungal pathogens, including *Colletotrichum* sp. and *Botrytis* sp., with diverse responses against them.

These results allowed us to select strains for greenhouse trials, currently in development.

## MS18

### NATIVE SOIL BACTERIA INTERACTIONS FOR THE DEVELOPMENT OF