



# **TUCUMAN BIOLOGY ASSOCIATION**

(Asociación de Biología de Tucumán)

Abstracts from the

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*In memoriam* Dr. Julia Marina Oterino

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of the Tucumán Biology Association

**197.**  
**STUDY OF THE SENSITIVITY OF FUNGI *IN VITRO* TO ENVIRONMENTAL DISINFECTANTS**

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Cleaning and disinfection process of packaging is very important to control environmental pollution and avoid losses caused by diseases of post-harvest. The objective of this work was to study the effect *in vitro* of disinfectants against environmental fungi isolated from strawberries and blueberries packing in Tucumán. We studied the ability of inhibition, taking into account growth rate, CIM and CFM (fungicide minimum inhibitory concentration, respectively) of three commercial detergents (Topac 56, 32 and 66), chlorine and quaternary ammonium in two strains identified as *Aspergillus spp.* and *Penicillium spp.* All disinfectants tested showed fungicidal ability on both strains to a decimal dilution within fifteen days of trial, except *Aspergillus spp.* which showed levels of CIM and CFM significantly higher for the quaternary ammonium compound until the three days of testing. The data obtained will serve to implement models of primary survival of fungi and select the most suitable for the construction of a dynamic model for predicting risk of environmental contamination.

**198.**  
**EVALUATION OF PHOSPHATE SOLUBILIZING BACTERIA AS INOCULANTS IN MAIZE**

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Plant-growth promoting rhizobacteria (PGPR) have the ability to solubilize mineral phosphate in soil and to produce phytohormones, antibiotics and siderophores. The application of soil microbes that promote nutrition and development of plants provides new alternatives for increasing the yield of major agricultural crops. Three phosphate solubilizing bacteria were isolated from Puna (NOA) using as selection criteria P-solubilizing activity, growth in phosphorus limited concentration and siderophores production. They were identified as *Serratia marcescens* EV1, *Pseudomonas tolaasii* IEXb and *Pseudomonas sp.* SP28 (access number FM202483, FM202487, FM202488 respectively). The growth-promoter effect was determined by inoculating bacteria on maize plants grown under controlled conditions in glasshouses. *Pseudomonas tolaasii* IEXb was the strain with the greatest capability to promote root and shoot development. Results from these experiments suggest that inoculation of PGPR with different beneficial properties such as P-solubilization should be the future trend in bio-fertilizer application for sustainable crop production.

**199.**  
**ACTION OF *Xenophyllum Poposum* AT DIFFERENT STAGES OF GROWTH OF *Candida Albicans* ATCC 3153**

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Preventive treatment for caries consists in mechanical and chemical methods. The WHO accepts the use of plants for the treatment of diverse affections. The aim of our work was to study the inhibitory effect *in vitro* of *Xenophyllum poposum* (Xp) at different growth stages on a reference strain of *Candida albicans* (Ca) (ATCC 3153). The Ca strain was sown in BHI broth. This medium with the inoculum was confronted with the ethanolic extract (EE) of Xp at a concentration of 54.7 mg/ml. The experiment was carried out at 0, 2, 5, 20, 24 and 48 h to determine at which stage of development Ca was sensitive to the EE. Growth control of Ca was also made without the phytotherapeutic product. For colony counts, the inoculum was sown in Saboreaud Glucose Agar and incubated at 37°C in aerobiosis.

Results: there was no fungicide action on Ca when the EE was added at time 0. 2) the death of Ca occurred 2 h after growth. With 54.7 mg/ml of the EE the microorganism is inhibited between 2 and 5 h of growth. That is why Xp could be applied as a colutory for the prevention of dental caries.

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**200.**  
**PREVALENT DISEASES OF THE ORAL CAVITY. KNOWLEDGE OF PREVENTIVE MEASURES**

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**Objective:** Exploration of the knowledge of school teachers of EGB 1° and 2° level in relation to the measures to prevent the diseases of the oral cavity. **Material and Method:** The study was carried out in San Miguel of Tucumán in 2008. A questionnaire with 28 items was administered to 26 teachers that belong to state schools of urban and urban-marginal public administration. The questions considered knowledge in relation to the measures to prevent oral cavity diseases. The procedures used were elaboration and calculation of absolute and relative frequencies. **Results:** Almost the entire population considers it necessary to visit the dentist every six months; however, only half of them (58%) have done so during the present year. Fifty-eight % admits not visiting the dentist regularly, 35% of the teachers claimed that brushing could prevent gum bleeding, 54% stated that the first visit to the dentist should be carried out when the first tooth appeared. Most of them (73%) were ignorant of the benefits of pit and fissure sealing. As to preventive strategies, the teachers stated that fluorine protects teeth from caries (85%). **Conclusion:** The teachers had notions on certain forms of promoting buccal care. Since teachers spend a great part of the day with students, it would be important to reinforce knowledge of measures to prevent oral cavity disease.