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(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

177.

SMOKING IN STUDENTS OF TUCUMAN

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Tobacco is addictive, produces tolerance and abstinence syndrome. Since 1940, the smoking habit has been related to respiratory and lung diseases and considered a world health problem. **Objectives:** to determine the percentage of smokers at high school and university according to factors such as schooling, age, reasons for smoking, effects, frequency and family influence between 2007 and 2008. **Materials and Methods:** 4922 anonymous surveys and close questions were carried out. Data analysis was performed through an exploratory descriptive associative study with 15.0 SPSS statistical program. **Results:** No significant difference were observed. There were more non-smokers in 2008: 70% as regards the ones that smoke and gave up in 2007 and 2008; 31% of the smoking ones belong to university. Most smokers started smoking before the age of 15; 65% and 63% in 2007 and 2008, respectively. Reasons: (2007, 2008) 49.7% and 50.8% "because I like it"; 25% and 27% "to relieve stress". Sixty-six % smokes every day without consequences. An increase in the smoking habit in the family was observed from 2007 to 2008 (30.2% to 69.8%) **Conclusions:** a high percentage of students who smoked was found. They were ignorant of the consequences of smoking and of the role of nicotine in tobacco addiction. No significant differences were observed in Tucumán with respect to 2007 in spite of law 7575, which was issued to ban smoking in the province.

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PURIFICATION AND PARTIAL CHARACTERIZATION OF AN EXTRACELLULAR LIPASE FROM *Aspergillus niger* MYA 135

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Lipases (triacylglycerol acylhydrolases; EC 3.1.1.3) are enzymes that catalyze a variety of reactions such as hydrolysis, transesterification, and ester synthesis. Owing to their catalytic versatility, lipases have received considerable attention with a view to biotechnological applications in a wide range of processes. In this study, we describe the purification and a partial characterization of an inducible extracellular lipase from *Aspergillus niger* MYA 135. PEG (20000) concentrated supernatant from a saline medium supplemented with 2% olive oil was loaded to a native PAGE. The lipase activity was purified using the electroelution method. An apparent molecular mass of 104.7 kDa and a pH of 5.1 were estimated. Kinetic studies showed km values of 0.13, 4.08, 0.017 and 0.60 for p-nitrophenyl acetate, propionate, palmitate, and estearate, respectively. The lipase activity was stable in the temperature range of 4-55°C, in the pH range of 2-10 and in the presence of Tween 60, Tween 40 and saponin. Thus, these enzyme properties justify the search for potential industrial applications.

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STUDY OF THE MICROBIOTA IN A *Rana catesbeiana* HATCHERY IN AUTOMN

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R. catesbeiana is the selected species for raniculture and its culture is an intensive process that enhances the risks of epizootics such as the red-leg syndrome (RLS). Nowadays, the probiotic utilization represents an alternative to avoid the use of antibiotics. Thus, the purpose of this work was to evaluate the microbiota in a hatchery in Córdoba, Argentina, to select probiotic strains and RLS-related pathogens. Samples were taken from dorsal and ventral skin, and cloaca of healthy animals in fattening phase of growth, water, and balanced feed. Serial dilutions were plated on selective and differential media. The UFC/mL were determined after incubating at 37°C for 24h in microaerophilia or anaerobiosis. Gram staining and catalase activity allowed classifying the selected colonies. The results show that the microbiota is composed of *Bacillus* spp., *Bifidobacterium* spp., Enterobacteriaceae, and yeasts. *Pseudomonas* spp and *Staphylococcus* spp., RLS-associated pathogens, were also present. This study represents the first approach to the isolation of LAB from cloaca (10⁶ UFC/mL) of *R. catesbeiana*, *Bacillus* spp., (10²-10⁶ UFC/mL) and *Bifidobacterium* spp., (10¹-10³ UFC/mL) from a *R. catesbeiana* hatchery. Evaluation of the beneficial properties of the isolates will be carried out to advance in the design of a probiotic for raniculture.

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EFFECT OF ASCORBIC AND FOLIC ACIDS ON NUTRACEUTIC PROPERTIES OF ADZUKI BEAN (*VIGNA ANGLULARIS* Wild)

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Seedlings of adzuki bean have nutraceutical properties, mainly attributed to their antioxidant compounds. The aim of this work was to establish the effect of folic and ascorbic acids on the accumulation of antioxidant substances in adzuki beans. Seeds of adzuki bean were immersed in distilled water or solutions of ascorbic or folic acids. Then, the seeds were placed in the dark at 28°C and 90% relative humidity for 7 days. Proline content and phenolic compounds were measured in cotyledons. Ascorbic acid at 0.1 mM and folic acid at 0.2 mM produced a transient increase in proline and phenolic compounds in the cotyledons, 5 days after sowing. Evolution of the cotyledonar content of ascorbic acid was not significantly different among treatments. Our results suggest that exposure to solutions of ascorbic acid 0.1 mM and folic acid 0.2 mM increase content of antioxidants in seedlings of adzuki bean.