



# **TUCUMAN BIOLOGY ASSOCIATION**

(Asociación de Biología de Tucumán)

Abstracts from the

## **XXVII ANNUAL SCIENTIFIC MEETING**

October 13 – 15, 2010

Tafí del Valle, Tucumán, Argentina

*The abstracts have been revised and evaluated by the Scientific Committee  
of the Tucumán Biology Association*

149.

**INDEPENDENCE OF PHYLLOCRHON OF THERMAL UNITS IN PEPPER (*Capsicum annum* L.) HYBRID 04 APL GROWN IN GREENHOUSES**Alderete G, Rodriguez Rey JA, Vidal JL, Amado ME, Budeguer R, Bahaas Nhas S.

Chair in plant physiology. FAZ, UNT. Avda. Roca 1900. Tucumán (4000). Argentina. E-mail: jarr@FAZ.UNT.edu.ar

In the case of pepper, the influence of the addition of thermal units on the phyllochron index (which indicates the time interval in the emergence of successive leaves) has not been registered. The determination of this index allows the prediction of the emergence of new leaves, an important event for growth simulation models. The assays were carried out at CEAL, INTA, in the town of Lules. We determined heat summation between sampling dates using the formulas described in the method of Gilmore and Rogers (1958). To perform the accumulation of heat units, the following formula was used: thermal units WB = (Temp) Max. + Temp (Min.) 2 TB was taken as a reference temperature at 10°C in Vidal J.L. (M.A. thesis). The results found showed great variability among the phyllochron and the heat units (r correlation coefficient = 0.021); this independence was already observed in other species such as garlic (Portela, J.A. and Lucero, C. worksheet N° 12 pilot station INTA, La Consulta, Mendoza), making it difficult to predict on mathematical models since it shows a change in the growth pattern in the cultivation of pepper (APL 04). This could be due to the fact that the pepper plant constantly varies its source/transfer/destination relation according to the crops existing in the cultivation.

150.

**LOCAL ANESTHETIC INFLUENCE ON ARTERIAL PRESSURE (AP) DURING DENTAL TREATMENT**Malica ML, Aybar A<sup>1</sup>, Luna S<sup>1</sup>, Aragon H<sup>2</sup>, Basualdo MM<sup>1</sup>.<sup>1</sup>Cátedra Farmacología y Terapéutica. <sup>2</sup>Servicio de Radiología. Centro Odontológico F.O.U.N.T. Tucumán. Argentina. E-mail: basualdomm@hotmail.com

Local anesthetics (AL) are compounds that block nervous conduction in a reversible way. Anesthetics are able to act on an uncertain point of a neuron, center or neuronal group, even the muscular membrane and myocardium. **Objectives:** -To evaluate the influence of two local anesthetics used in dentistry. -To compare AP and heart rate (HR) before and after infiltration of AL during dental treatment. **Materials and Methods:** the sample consisted of n=20, 13 (65%) females and 7 (35%) males. The AL used was Carticaina 4% with L-adrenaline 1:100.000 (Totalcaina and Anescart). **Results:** 100% of the patients in the two groups showed loss of sensibility. As for motor function loss, the Totalcaina group showed 20% function loss and the Anescart group 5% function loss. According to independent tests, these anesthetic solutions did not show significant differences between both groups ( $p > 0.05$ ). AP analysis at the beginning or end of the treatment using t-test for related samples showed significant differences ( $p < 0.05$ ) while initial and final HR did not show significant differences. **Conclusion:** We can conclude that the AL used associated to vasoconstrictors can be considered appropriate and safe and that the AP alterations that take place can be induced by stress and fear of the dental treatment situation.

151.

**ANTIBACTERIAL ACTIVITY OF PROPOLIS FROM RINCÓN, CATAMARCA, ARGENTINA. ISOLATION OF BIOACTIVE COMPOUNDS**Solórzano E<sup>1</sup>, Vera N<sup>2,4</sup>, Maldonado L<sup>4</sup>, Bedascarrasbure E<sup>4</sup>, Ordoñez R<sup>1,2,3</sup>, Isla M<sup>1,2,3</sup>.<sup>1</sup>INQUINOA-CONICET. <sup>2</sup>Facultad de Bioquímica, Química y Farmacia. <sup>3</sup>Facultad de Ciencias Naturales e IML. UNT. <sup>4</sup>INTA. EEA. Famallá. Tucumán. Argentina. E-mail: misla@fbqf.unt.edu.ar

Previous paper reported the antioxidant and antimicrobial activities of different NOA propolis extracts but very little has been reported about their chemistry. The aim of this study was the isolation and identification of bioactive compounds from ethanolic extracts of propolis from "Del Monte" phytogeographical region (Catamarca, Argentina) against *Staphylococcus aureus* resistant to methicillin (MRSA). Through high-resolution chromatographic techniques (HPLC), twelve flavonoids with different degrees of hydroxylation and methoxylation were isolated and their structures were elucidated by spectroscopic analysis. Isolation was bioguided by antibacterial activity against MRSA. The compounds 2',4'-dihydroxychalcone, 2',4'-dihydroxy-3-methoxychalcone, 2',4',4-trihydroxy-6'-methoxychalcone, 5-hydroxy-4',7-dimethoxyflavone, 4',5-dihydroxy-3,7,8-trimethoxyflavone and 7-hydroxy-5,8-dimethoxyflavone were the most active with values of minimal inhibitory concentration (MIC<sub>50</sub>) of 10 µg/ml. This is the first report of the isolation of metabolites with antibacterial activity of propolis from Catamarca, Argentina.

152.

**LOSS OF THE DIURETIC EFFECT OF *Amaranthus muricatus* INFUSION DUE TO CHRONIC ADMINISTRATION**Blanes S<sup>1</sup>, Cuello S<sup>3</sup>, de la Rocha N<sup>1</sup>, Vera N<sup>1,2</sup>.<sup>1</sup>Cátedra de Farmacoquímica y Farmacotecnia. UNLAR. Av. Dr. Rene Favaloro S/N La Rioja 5300. <sup>2</sup>Cátedra de Farmacoquímica. FBQF. Ayacucho 471. <sup>3</sup>Facultad de Ciencias Naturales e IML. Miguel Lillo 205. UNT. Tucumán 4000. E-mail: nrvera@fbqf.unt.edu.ar

*Amaranthus muricatus* is widely used for its diuretic properties in La Rioja, Argentina. In this study we evaluated the biochemical parameters necessary to determine the possible alterations in the renal function of rats that ingested infusion and decoction of 2% of the aerial parts of *A. muricatus* every day for 30 days. Female Wistar rats aged 60 days old were divided into 3 lots of 6 animals each, called batch control, infusion and decoction. After administration, they were given with food and water *ad libitum*. Urine volume was measured at 4, 7, and 24 hours after the first administration and then daily at 9 am for 30 days. The diuretic effect was considered as increase percentage in urine volume compared with the control group at each measurement. Results were statistically analyzed using the Dunnet test. The diuretic effect was only observed in the group that received the infusion from 7 h to 48 h after administration with percentages of 31.40%  $p < 0.05$ , 69.44%  $p < 0.01$  and 56.25%  $p < 0.05$ , respectively. After 48 hours there was a loss in diuretic effect in this group. Previous phytochemical studies indicated the presence of anthraquinones, flavonoids, sterols and ammonium bases.