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SHORT COMMUNICATIONS

Facultad de Ciencias Bioquímicas y Farmacéuticas

A1
ANTIHISTAMINES FOR SISTEMIC USE THAT ARE POTENTIALLY INAPPROPRIATE IN THE ELDERLY

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The prescription of drugs to elderly patient should particularly consider safety. In previous works it was developed a preliminary list containing drugs sold in Argentina and that are considered potentially inappropriate (PI) for use in older adults (PIMp list). The aim is to submit for evaluation by a panel of experts antihistamines for systemic use according to safety / effectiveness relation in the elderly and analyzing the level of consensus. The Delphi method was applied, constituting a panel of ten experts on the subject. The questionnaire of the 1st round consisted of assessing antihistamine agents of the PIMp list, according to a Likert scale with five response categories. There were defined three criteria to be satisfied to obtained the consensus in each drug: a) Number of evaluators ≥60% of the panel members, b) proportion of agreements weighted ≥0,800; c) frequency of the statistical mode ≥60%. After two Delphi rounds, and because of its anticholinergic activity to which the elderly are especially sensitive, 11 antihistamines were rated as PI: hydroxyzine, diphenhydramine, doxylamine, brompheniramine, dexchlorpheniramine, dimethindene, chlorpheniramine, drometazina, mequitazine , carbinoxamine, cyproheptadine. As safer therapeutic alternatives there were proposed 2nd or 3rd generation antihistamines with low passage to Central Nervous System: cetirizine, loratadine, fexofenadine, desloratadine. In next works they will be evaluated agents that act on other organs and systems. It is essential to have a definitive PIM list agreed by experts of our country to optimize prescribing and improve the quality of life of older adults.

A2
ASSOCIATION BETWEEN GLIADIN ANTIBODIES WITH DEAMIDATED AND NATIVE SPECIFICITY AND SEX, AGE AND INTESTINAL BIOPSY IN CHILDREN WITH CELIAC DISEASE. PRELIMINARY STUDY

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Our objective was to analyze the association between biochemical markers of specific anti-gliadin (native and deamidated) in children with celiac disease (CD) and sex, age and degree of intestinal biopsy, from Servicio de Gastroenterología Hospital de Niños V. J. Vilela. Twenty three pediatric patients (11 male and 12 female; age range: 1-12 years old) were studied. Serum levels of anti gliadin (AGA) IgA / IgG (qualitative) and anti deamidated gliadin peptide (DGP) IgG (quantitative) antibodies were determined by ELISA. Intestinal biopsy was evaluated by histological classification of Marsh-Oberhuber. We found that the proportion of AGA-IgG positive patients is significantly higher in patients ≤ to 5 years old than in older patients ($p < 0.05$) and that DGP-IgG showed significantly higher titers in male than in female patients ($p < 0.05$). Although no other biochemical parameter show statistically significant differences ($p > 0.05$), we observed that higher DGP-IgG titers occurred in patients ≤ 5 years old, and that all patients with titers> 100 U / ml exhibited subtotal atrophy. We conclude that, in the sample studied, the association found between AGA-IgG antibodies and patients under 5 years old, and the titer of DGP-IgG and sex, evidences the heterogeneity of seric presence of CD antibody markers, suggesting the importance of further studies in relation to demographic variables that would enable combinations of marker antibodies with a higher positive predictive value.

A3
AUTOANTIBODIES IN AUTOIMMUNE HEPATITIS

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Autoimmune hepatitis (AIH) is a chronic and progressive inflammatory liver disease of unknown etiology whose pathogenesis is attributed to an immune reaction against autoantigens hepatocellular. Autoantibodies in autoimmune disease are generated, most non-specific because they can appear in other inflammatory conditions, being only a few indicators of the disease. The main characteristics that define the AIH are high titers of autoantibodies and polyclonal hypergammaglobulinemia. The aim of this study was to investigate the presence of two autoantibodies: anti-Fibronectin (a-Fn) and anti-Histone (a-His), in patients diagnosed with AIH, who attended the Provincial Hospital Centennial Rosario. 46 samples were analyzed. The study of autoantibodies was performed by an indirect ELISA. Those samples that showed a value of greater than 0.140 Abs were considered positive for a-Fn and above 0.071 for a-His. In the 19 (41.3%) patients studied they were tested positive for anti-Fn, 10 (21.7 %) for anti-His and 8 (17.4 %) for both autoantibodies. A sample of normal sera (n = 16) was processed to determine the cutoff value for the studied variables. Those samples that showed a value of greater than 0.140 Abs were considered positive for a-Fn and above 0.071 for a-His. The results confirm the presence of a-Fn and a-His, in some patients with AIH. By McNemar´s test is concluded that in these patients, the proportion of positive results is not the same for both antibodies ($p < 0.05$). In later works we analyze the association degree of liver damage and the presence of a-Fn and-His.

A4
EFFECT OF DIAZEPAM ON THE EXPRESSION OF THE HEAT SHOCK PROTEIN 70 (HSP70) IN PRIMARY CULTURES OF RENAL CELLS

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It has been previously reported that the pretreatment with ligands of the 18 kDa translocator protein (TSPO) exerts protective effects in experimental models of renal injury. Different mechanisms which could be involved in this beneficial effect have been proposed. The benzodiazepine diazepam, widely used in the clinic, is a TSPO ligand. The aim of the present work was to assess the effect of diazepam on the expression of HSP70 in renal cells. Primary cultures of rat renal cortical or medullary cells were used. From the fourth day of their obtaining, cultures were incubated in the presence of 100μM diazepam (DZ) or the corresponding vehicle (Veh). After 48 hours of exposure to the benzodiazepine, cells were processed for the detection of HSP70 protein by Western blot techniques. Statistical analysis was performed; *$p < 0,05$; n=3 per group. The analysis of band densities (HSP70/Coomassie, arbitrary units) showed that incubation of cells in the presence of DZ induced an increase in the expression of HSP70, such in cortical (Veh: 2,86 ± 0,18, DZ: 4,96 ± 0,16 *) as in medullary (Veh: 5,34 ± 1,26, DZ: 10,82 ± 1,13*) preparations. These results demonstrate that treatment with the TSPO ligand, diazepam, induces the expression of HSP70 in kidney cells obtained from different regions of the organ. This protein is associated with cytoprotective mechanisms; and the involvement of these mechanisms in the TSPO ligands-mediated prevention of kidney damage remains to be further studied. PIP11420110100309.

A5
EFFECTS OF THE CONSUMPTION OF SUGAR SOLUTIONS ON ADIPOSITY, GLYCOLIPIDIC PROFILE AND LIVER AND KIDNEY HISTOLOGY IN OBESE DIABETIC RATS.

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The growing habit of drinking sweetened beverages has been linked to the increasing prevalence of overweight and obesity. To assess the effects of the consumption of sugar solutions on adiposity, glycolipidic profile and liver and kidney histology in IIMb/Beta rats, two 20g/dl water solutions of fructose (F) and glucose (G) and water to a control group (C) were offered during 90 days to two groups of 7 male 70 days-old rats. At the end of the experiment plasma glucose and triacylglicerols (TAG) were quantified. After euthanasia, perigonadal (PG) and retroperitoneal (RP) fat pads; livers and kidneys were excised and weighed. Organs were processed according to routine histological techniques, dyed with HE; Direct Red 80/picric acid to evaluate fibrosis and PAS for glycogen content. No difference was registered on final body weight or weight gain between groups. PG relative weights (g/100g) were: F: 2,06 ± 0,18; G: 2,51 ± 0,18; C: 1,92 ± 0,32 (F vs G $p<0,05$; G vs C $p<0,05$; F vs C ns). RP: F: 2,96 ± 0,31; G: 3,88 ± 0,28; C: 2,58 ± 0,48 (F vs G $p<0,05$; G vs C $p<0,05$; F vs C ns). No differences were observed in plasma glucose, while TAG (mg/dl) were significantly different: F: 179,7 ± 77,9; G: 269,0 ± 65,9; C: 178,7 ± 22,9 (F vs G $p<0,05$; G vs C $p<0,05$; F vs C ns). A decrease in liver glycogen content was observed in F, mainly

in perilobulillar areas while larger glycogen content was detected in G, both compared to C. A slight thickening of the basal membrane (BM) of the parietal layer of Bowman's capsule (CB) in isolated renal corpuscles was observed both in F and C; the thickening of the BM of some collecting tubules and of the BM of the parietal layer of CB on some corpuscles appeared in G. Glucose solution intake resulted in greater abdominal deposit, increased TAG and liver and kidney histological alterations.

A6
ESTIMATION OF THE GLOMERULAR FILTRATION RATE IN PATIENTS WITH GLOMERULAR PATHOLOGY COMPARING CKD-EPI Y MDRD-4 FORMULAS

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More than 40 formulas have been developed to estimate the glomerular filtration rate (GFR) involving creatinine concentration (Cr) as well as demographic and anthropometric variables. Modification of Diet in Renal Disease (MDRD-4) is the most recommended one. However, several studies state that Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equation improves the results obtained with MDRD-4. Our aim was to compare the results of the estimated GFR (eGFR) obtained with both formulas in patients with glomerular pathology. We studied 32 individuals with glomerulopathies, age (mean±SD): 34±8 years old, 24 females (F) and 8 males (M). Cr was assessed by an automated method. Results were expressed as mean±SD. eGFR (ml/min) with CKD-EPI and MDRD-4 were 102±41 and 105±51 respectively; no significant differences were obtained between both formulas ($p>0.05$). Correlation coefficient between both equations was highly significant ($r=0.93$; $p<0.0001$). eGFR values were compared by sex and age. Results obtained for CKD-EPI and MDRD-4 by sex were: F: 107±38 and 111±51; M: 85±47 and 86±48, respectively. Results obtained for CKD-EPI and MDRD-4 by age were: < 34 years old: 109±41 and 111±55; ≥ 34 years old: 93±40 and 96±46, respectively. No significant differences were obtained for sex nor age ($p>0.05$). We conclude that both formulas could be used indistinctly as estimators of GFR in patients with glomerular pathology. For GFR values > normal values, eGFR with both equations would tend to a poorer correlation, then stratification and comparison of these values with those obtained from Cr clearance are suggested in order to determine which equation would be the best analytical predictor in patients with glomerulopathy and glomerular hyperfiltration.

A7
EVALUATION OF TOBACCO EFFECT ON THE INTEGRITY OF DNA AND ITS RELATIONSHIP WITH EARLY APOPTOSIS IN SPERMATOZOIDS OF INFERTILE MEN

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The transference of an intact DNA molecule from the spermatozoid to ovule is decisive to obtain fertilization with perspectives of success. The externalization of phosphatidylserine (PS) from the inner face of the plasma membrane to the sperm cell surface is an early indicator of apoptosis in the spermatozoids. This translocation can be detected using conjugated Annexin V with fluorescein isothiocyanate (Annexin V-FITC) by fluorescence microscopy. The tobacco smoke has toxic substances that are reactive oxygen species increasing the risk of sperm DNA fragmentation and the apoptotic events altering the sperm viability. Our objective was to evaluate the effect of consumption of tobacco in men with idiopathic infertility on the integrity of DNA and the relationship with early apoptotic events in the spermatozoids. Semen samples (n=38) have been analyzed from men that consulted on infertility. Two groups were formed: G_F (n=15) smokers more of 20 cigarettes / day and G_{NF} (n=23) no smokers. The sperm study and functional tests (WHO 2010) have been carried out. The integrity of sperm DNA was studied with acridine orange and fluorescence microscopy. The presence of sperm cells in early apoptosis was evaluated using Annexin V-FITC-apoptosis Kit (AV). The *t*-student test was applied to compare the averages of the analyzed variables between both groups. The obtained results were: NA (% spermatozoids with native DNA) G_F: 55.81±6.22 vs G_{NF}: 83.0±6.28; $p<0.0001$ and AV (% spermatozoids positive Annexin V) G_F: 27.5±5.97 vs G_{NF}: 14.4±2.93; $p<0.0001$. The analysis of results shows significant difference for the analyzed variables between G_F and G_{NF}. The research of early apoptotic events and the evaluation of sperm DNA give information in the study of male factor in the infertile couple.

A8
EVALUATION OF FRACTAL DIMENSION OF HUMAN ERYTHROCYTES INCUBATED WITH *Trichinela spiralis* LARVAE IN VITRO.

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Trichinella spiralis is a nematode parasite responsible for the disease trichinosis. Newborn larvae (NL) of this nematode travel via the blood, thus the study of their interaction with erythrocytes is of great importance since they could produce hemorheologic alterations in the host. Digital Image Analysis is an adequate tool for characterization of the aforementioned interactions since the Fractal Dimension obtained from images of red blood cells (RBC) depends on the morphology of the erythrocytes and of their aggregates. The aim of this work was to characterize the effect of the parasite on the membrane of human RBC through Fractal Dimension determination of images from blood samples incubated with NL of *T. spiralis*. A general factorial design 2x2x3 (n=3) was performed to assess the significant of the factors: controlled agitation (with/without), presence of *T. spiralis* nematode and time of incubation (0, 60, 120 min). Concentrated NL were incubated (37ºC) at equal amounts with fresh RBC (group O) and a Mikova DCM500 digital camera was incorporated to an optical microscope (40X) in order to obtain the microscopic images. Images were stored as JPEG format (1280x960) and Fractal Dimension was determined by the Box-counting method. Significant differences were obtained in the images of RBC incubated with the parasite. Also, time of incubation was shown to be significant but no differences were observed for controlled agitation ($\alpha = 0.01$). The present work suggests the possible alteration of the morphology and the aggregation of the RBC by action of NL of *T. spiralis*. In this regard, it would be newsworthy to study the possible hemorheological consequences in the host resulted by the circulation of the larvae in the bloodstream during their biological cycle.

A9
EVALUATION OF THE TOXIC EFFECTS OF MARIHUANA ON HUMAN SPERM THROUGH SEMINAL PARAMETERS

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Marihuana is an illegal drug that acts by altering conscience and human behavior. There are essential seminal parameters when evaluating reproductive capacity. We analyzed 67 semen samples of men that attended the Laboratory of Reproduction of Hospital Provincial del Centenario from January to August 2014; these men were nonsmokers, not exposed to heat and without seminal pathology capable of altering seminal parameters. Men were divided in two groups: Gcm (n=37), chronic consumers of marihuana for at least 1 year; and Gc (n=30), control group, non-consumers. The following seminal parameters were analyzed: sperm morphology, with hematoxylin; progressive motility, applying subjective method; sperm concentration; anatomic integrity of sperm membrane, determined by the hyposmotic test; integrity of nuclear DNA, through acridine orange test; and condensation state of chromatin, determined by blue aniline test. Student´s *t* test was applied to compare the averages of the analyzed variables between both groups. We did not find any significant differences in sperm concentration ($p=0.082$), but statistically significant differences were obtained for all other variables ($p<0.05$). The results suggest that marihuana is a toxic substance, capable of altering the viability and fertilizing capacity of human sperm. The effect of marihuana consumption is a factor that must be evaluated in the integral study of infertile men.

A10
EXACERBATED D ANTIGEN EXPRESSION. A MOLECULAR AND SEROLOGICAL STUDY

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The D antigen of the Rh blood group system is composed of a mosaic of epitopes expressed on the erythrocyte membrane. RhD phenotyping is based on standardized hemagglutination techniques. The time until agglutination appears is an important parameter during the D antigen typing. Strongly positive reactions before 10 seconds or weakly positive after 120 seconds suggest an aberrant expression of D epitopes. The *RHD* genotyping may contribute for clinical decision making in transfusion medicine. The aim of this study was to characterize the molecular basis responsible for a phenotype with overexpression of the antigen D. A sample that strongly reacted with the anti-D before 2 seconds was studied. Full Rh phenotype was determined. The expression of D, C, c, E, e antigens was investigated by flow cytometry. R1R2 red blood cells were used as positive controls. The molecular structure of the *RHCE* gene was analyzed by

specific polymorphic sites using PCR strategies. Serologic and flow cytometric studies did not detect C, c, E nor e antigens expression suggesting partial deletion of Rh antigens (D-- phenotype). Flow cytometry studies showed an exacerbated D antigen expression. The median value of the fluorescence intensity of the sample was 12204, while the average score of the positive controls was 8898. Molecular studies revealed no *RHCE* specific sequences in a genetic fragment encompassing exon 2 and exon 7 of the *RHCE* gene. *RHCE* specific polymorphisms corresponding to exon 1, 9 and 3'UTR region were identified. These data suggested that the studied sample carries an *RHCE(1-2)-D(3-8)-CE(9-10)* hybrid allele in an homozygous state. The presence of specific *RHD* sequences along most of the new recombinant structure would be responsible for the exacerbated expression of the D antigen detected in the patient's sample carrying this allelic variant.

A11
EXTRACTION AND STABILITY OF ANTIOXIDANTS IN LEAVES OF *Prosopis ruscifolia* GRISEB

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Prosopis ruscifolia "vinal", a wild tree from Argentina, produces antioxidant compounds (AOC) in leaves under oxidative stress. The aim was to evaluate the factors affecting the extraction and stability (E&S) of the AOC from the leaves of vinal (VL). VL were obtained from trees grown on a saline in Santiago del Estero, dried at 40°C during 45 hs, milled, and stored at -20°C. Factors related to the E&S of the AOC tested using design experiments were: extraction method (infusion or decoction), pH (5, 7 or 9); ionic strength (I: 50 or 100 mM); temperature (T: 8 or 25°C) and the presence of light or darkness (D). For infusions, 1.6 g of VL was added to 10 mL of boiling buffer, whereas for decoction, the mixture of VL with buffer was boiled. The measurement of the antioxidant activity (AA) of the extracts was carried out by the method of capture of the radical ABTS. The factors that influence significantly (p=0.0536) the AOC extraction were: extraction method, resulting decoction more effective than infusion (up to 5% more of AA), and I, yielding greater AA when the I of the medium was 50 mM (up to 2% more). The pH did not influence the extraction of AOC (p = 0.4740). After 15 days of storage, it was observed that the highest pH (9), the highest T (25°C) and D were the best conditions for preserving the AOC, since 98.3% of initial AA is kept (up to 20% is lost in other conditions). Although the I of the buffer influenced the extraction did not affect the storage of AOC (p = 0.1682). It was observed that the extracts obtained by decoction are more stable from a microbiological point of view since the VL are boiled. To conclude, the best conditions to extract the AOC of the VL in aqueous medium are: decoction, I=50 mM and the most appropriate conditions for storing of extract solutions during 15 days are a slightly alkaline medium, room T and D.

A12
FLORA OF THE PROVINCE OF SANTA FE (ARGENTINA): THE FAMILY OLEACEAE

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The Family *Oleaceae* belongs to Class *Magnoliopsida* and is currently included in the Order *Lamiales*. It comprises 25 genera and about 600 species inhabiting tropical and subtropical regions in both hemispheres. It is a monophyletic family on the basis of several morphological synapomorphies. In Argentina five genera occur, of which only two appear in Santa Fe: *Ligustrum* L. and *Menodora* Bonpl. The present work contributes to the knowledge of this family, providing keys to the identification of the different taxa based on morphological characters and a distribution map of the *Oleaceae* in Santa Fe. The methods consist of a bibliographical review, consultation of national herbaria with important collections of the province (SF: Esperanza; SI: San Isidro; UNR: Zavalla), field work experience of the authors and lab work to confirm their identity. The genus *Ligustrum* L. is represented by two naturalized species: *Ligustrum lucidum* W.T. Aiton and *Ligustrum sinense* Lour. They are ornamental and known as "ligustro" and "ligustrina" respectively. The genus *Menodora* Bonpl. has two native species: *Menodora integrifolia* (Cham. & Schltdl.) Steud. with two infraspecific taxa: *M. integrifolia* (Cham. & Schltdl.) Steud. var. *integrifolia* distributed in almost all departments, and *M. integrifolia* var. *pinnatisecta* (Steyerm.) Burkart in the Vera department. The other species, common in San Javier department, is *Menodora trifida* (Cham. & Schltdl.) Steud. Taxonomic information, distribution map and illustrations are provided.

A13
HEPCIDIN 25 (HEP-25) QUANTIFICATION IN HEMOGLOBINOPATHIES. PRELIMINARY STUDY

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Recent years have been characterized by the understanding of the physiology of iron metabolism, especially with regard to the identification of the Hep-25 molecule considered the central regulator of systemic iron homeostasis. The aim of this study was to establish the value of Hep-25 bioactive peptide in two groups: control and in patients with hemoglobinopathies. Structural hemoglobinopathies and Thalassemias were diagnosed according to conventional techniques and molecular biology. Results: The mean value of hepcidin in beta thalassemia and double heterozygous for abnormal hemoglobin/thalassemia was significantly lower than in controls ($p < 0.0001$). Decreased values of Hep-25 in hemoglobinopathies compared with the control group, explained the iron overload in mononuclear phagocyte system and enterocytes. The importance of this trial highlights Hep 25, the first preliminary study of bioactive peptide in our country.

A14
MORPHOLOGICAL AND ANATOMICAL CHARACTERIZATION OF *Funastrum clausum* (Jacq.) Schlecht. (APOCYNACEAE), NATURAL SOURCE OF PROTEOLYTIC ENZYMES

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Funastrum clausum (Jacq.) Schlecht., is one of the three species of the genus *Funastrum* (Apocynaceae, Subfamilia Asclepiadoideae) in Argentina. It is a native fickle plant, that grows wild on the banks of rivers and streams of northern and northeastern Argentina and its white latex is a natural source of proteolytic enzymes. The aim of this work is to study morphological and anatomical characters of aerial organs of *Funastrum clausum* (Jacq.) Schlecht. to contribute to the correct botanical identification of the species. We worked with fresh material, fixed in FAA (96º ethyl alcohol, water, formaldehyde and acetic ac. 50: 35: 10: 5) and embedded in paraffin. Cross sections of leaf, petiole and stem with sliding microtome were performed. Transparentations and macerated were carried out according to conventional techniques. Sections were stained with safranin and cresyl violet. The results of this study show that *Funastrum clausum* is a fickle suffrutice of glabrous stems, somewhat pubescent in leaf nodes. The leaves are opposite, oblong, elliptical or ovate with developed apiculus and obtuse base. Glands on midrib in the adaxial face, which is glabrescent, were observed. The petioles are pubescent. The blade is anfistomatic and the mesophyll is dorsiventral. The epidermis is unistrata with thick striated cuticle and stomata type rubiaceous. Petiole in cross section is concave-convex with few simple hairs. The primary stem possesses hypodermis and palisade parenchyma. The secondary stem originates stratified cork and uneven development of xylem in torsion areas. The rays are observed uni and biseriate. Laticiferous are not articulated branched and located in the parenchyma just beneath the epidermis, in aerial organs.

A15
NEW PCR SSP STRATEGY TO DETECT THE *KEL*02N.06* ALLELE

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The rare KEL null (K_0) phenotype is defined by total absence of the Kell protein and all KEL antigens on red blood cells surface. This variant allele occurs in homozygosity or compound heterozygosity for silent alleles at the KEL locus. K_0 carriers can produce clinically significant anti- Ku antibody after transfusion and/or pregnancy. In previous studies we reported the *IVS3+1g>a* mutation (*KEL*02N.06* allele) in a pregnant woman. She gave birth to a preterm infant with hemolytic disease of the newborn. The aim of this study was to develop a PCR SSP strategy to identify individuals carrying the allele *KEL*02N.06* in the household of the patient. Primers were designed to detect nucleotide G at position *IVS3+*1(wild type) and another pair to identify nucleotide A at position *IVS3+1,* present in the allele *KEL*02N.06*. To establish optimal reaction conditions, DNA samples from the patient (genotype *KEL*02N.06/KEL*02N.06*) and a wild type individual (genotype *KEL*01/KEL*02*) were used. With this strategy it is possible to detect the *KEL*02N.06* allele in double or single dose. Subsequently, genomic DNA from family members of the patient was obtained and molecular studies were performed. The results demonstrated that six family members (mother, three sisters and two sons of the patient) are carriers of the *KEL*02N.06* allele in heterozygous state. These findings show that household members are not compatible donors regarding the Kell system. The individuals under study carry this allele in a single dose consequently all expressed the Kell glycoprotein in the erythrocyte membrane. The

molecular study also allowed to provide genetic counseling to the patient´s sisters and to inform they are not at risk of developing an anti-K_u.

A16
NOVEL *RHD* ALLELE RESPONSIBLE FOR A D VARIANT PHENOTYPE

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The D antigen expression may have qualitative and quantitative variations called D variant phenotype (Dvar). *RHD* alleles responsible for a Dvar phenotype are in general genetically linked to *RHCE* alleles. The aim of this study was to investigate the molecular basis responsible for D variant phenotype in samples carrying the E antigen. 88 samples with Dvar ccEe phenotype from different regions from our country were studied (Rosario, n=20; La Plata, n=19; CABA, n=14; Córdoba, n=8 and Tucumán, n=27). The Rh phenotype was performed by hemagglutination. PCR-SSP was used to study *weak D type 2* variant and the 10 *RHD* exons. Not characterized samples were analized by sequencing. Serologic studies showed a weak D antigen expression in all samples. PCR-SSP studies identified *weak D type 2* allele in 64,8% of the samples (n=57). Sequencing analysis revealed the presence of *weak D type 5* (2,3%; n=2), *RHD (911T>A)* (1,1%; n=1) and *DFR-2* (1,1%;n=1) alleles. We also identified a not reported polymorphism in 21,6 % of the samples (n=19). This novel allele is characterized by the point mutation *359C>A*, located in exon 3 of the *RHD* gene and was called *RHD (359C>A)*. This mutation causes an amino acid substitution in the fourth transmembrane domain of the RhD protein, characteristic of weak D phenotype. The frequency of the novel allele in Cordoba (37,5%) and Tucuman (48.2%) was significantly higher than in Rosario, CABA and La Plata (0% ,7,1% and 10,5% , respectively). This could be explained by the contribution of the Amerindian ethnicity to the population of the north of our country. Our findings show that molecular studies are a necessary complement for characterizing samples with an altered D phenotype allowing the identification of quantitative Dvar, which may contribute for clinical decision making in transfusion and obstetric medicine.

A17
OCCUPATIONAL INJURY INCIDENCE DUE TO BIOLOGICAL MATERIAL IN A TERTIARY REFERRAL PUBLIC HOSPITAL IN SANTA FE PROVINCE SINCE 2009 TO 2013

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Provincial del Centenario Hospital (PCH) is a public hospital in 3rd level of attention and reference in Santa Fe Province. Here, the Emergency Medical Service (EMS) is constituted by medical and nurses staff, also by physicians recently graduated in training under Medicato system. The objective was to assess the incidence of biohazards accidents in the EMS of HPC comparing with other medical care areas. A retrospective cohort study between 2009-2013 was performed. Accidents reported from care areas of HPC were considered. The descriptive statistical analysis was performed. Incident rates (IT) and their reasons (RIT) were estimated and person-hours worked were calculated in the five years study. During the study period, medical workers reported the 45.7% (95% CI: 37.2 to 54.3%) accidents; nurses, the 38.4% (30.3% to 47.1%) and the rest, the 15.9 % (10.3% to 23.1%); (n = 138). When the analysis was restricted to medical and nursing workers it was found that the prevalence of events in the EMS was 37.1% (28.3 to 46.5%), while in other health care areas (OA) was 62.9% (53.5 to 71.7%); (n = 116). IT (accidents/100 person-hours) were for EMS: $9.307x10^{-3}$ and OA: $1,194x10^{-3}$; $RIT_{EMS/AO}$: 7,793 (95%CI: 5,346 to 11,359). Age workers (mean ± SD; years): EMS: 27.24 ± 6.02; OA: 35.87 ± 11.11; $p < 0.0001$. Seniority at jobs (mean ± SD; years): EMS: 0.83 ± 1.27; OA: 10.43 ± 7.77; $p < 0.0001$. Task in the EMS shows marked vulnerability compared to OA. These findings are justified by lower experience associated with a lower average age and seniority in EMS.

A18
PARAMETERS COMPARISON OF IRON METABOLISM AND ERYTHROPOIETIN (AS INDICATOR ERYTHROPOIESIS) IN NORMAL PATIENTS AND HETEROZYGOUS BETA-THALASSEMIA

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B thalassemia (Th) minor is a hereditary anemia with a variety of morphological, biochemical and clinical phenotypes. The increased erythropoiesis evidenced in such anemias is regulated by erythropoietin (EPO). The aim of this study was to analyze and compare various parameters of iron metabolism and EPO levels in βTh minor patients (β^+ and β^0). All results were compared with a control group of the same age and sex. Results: In the three groups analyzed there were no significant differences in Iron, TIBC and Ferritin. EPO averages differ according to group (p = 0-004). Conclusions: Although βTh carriers have mild phenotypes, all have higher erythropoietic activity than normal individuals. The expansion of erythropoietic mass regulates iron deposits, however, no significant differences in serum ferritin were found between β^0-β^+ Th.

A19
PHYTO, CYTO AND GENOTOXIC STUDY OF THE Ag(I)-ALBENDAZOLE-PHENANTHROLINE COMPLEX THROUGH THE ALLIUM TEST

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In recent years there has been a dramatic increase in severe fungal infections in immunocompromised patients. Albendazole (albz), as other benzimidazole derivatives, has many biological properties (antihelmintics, anti-cancer, antiviral, antifungal, etc.) which increase by complexing with metal cations. In this paper we report the phyto, cyto and genotoxic study of the heteroleptic complex formed by the silver(I) cation and albz and *o*-phenanthroline (phen) as ligands, synthesized in our laboratory. The complex showed moderate antifungal activity, mainly against *Candida albicans* and *C. tropicalis*. Selected yellow onion bulbs were exposed to increasing doses of the tested substances (the complex and the ligands, 7 bulbs/dose). Mother solution (0.0625 g/L) and its dilutions (3/4, 1/2, 1/4 and 1/20) were analyzed. Linear fit of the data and the analysis of variance (ANOVA) were used to analyze the dependence between the biological parameters and the concentration of each tested substance. While albz showed no influence on the elongation of roots ($p > 0.05$), both phen as the complex produced a non-linear decrease of this parameter, with significant difference in mean relative to the negative control. The mitotic index of meristem cells of *Allium cepa* L was not affected by albz in the studied conditions. Arrest of mitosis in prophase was observed with phen and less with the complex. Low numbers of chromosomal aberrations were observed in the studied conditions for the three tested substances. The effects observed with the complex on roots elongation and MI could be due to the presence of phen, because they were not observed for albz. In conclusion, while antifungal activity was promising, the future use of the complex Ag(I)-albz-phen as medical drug must be considered carefully, requiring deeper and/or diversify biological studies of the same.

A20
PRELIMINARY STUDY OF CD44 MARKER IN UROGENITAL CARCINOMA

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CD44 is a transmembrane glycoprotein that is involved in the interaction cell-cell and cell-extracellular matrix, cell differentiation and migration. Various tumor cells as well as their metastases express high levels of CD44, whereas some tumors express exclusively CD44std. The aim of this work was to perform a preliminary study of CD44 serum levels in urogenital carcinoma and to determine its importance as a marker or prognostic factor. Serum samples (n= 35) from donors volunteers without demonstrable pathology (control group) and patients with urogenital pathology (n= 27) from Urology Department of Centenary Provincial Hospital. We used a enzyme-linked immunoassay for quantitative detection of CD44std. The final color is proportional to the amount of CD44std present in the sample. The results of control samples showed values within the reference range (251 - 925 ng/ml). 17 patients had values greater than 925 ng/ml, 3 did not show significant differences with control group and in 7 patients the marker CD44 were not detected. Patients with higher values than reference were related to a greater degree of malignancy diagnosed by pathological anatomy. The results obtained suggest that the increase of CD44 it might be associated with a more aggressive course of the disease, which should be confirmed with a larger number of observations.

A21
RENAL AND HEPATIC MORPHOLOGICAL STUDIES OF SPONTANEOUSLY DIABETIC RATS (eSS) RELATED WITH ANIMAL AGE

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Rats called IIM/FmeSS (eSS-e Stilmann Salgado) develop diabetes mellitus type II (DMTII) spontaneously. The aim was to characterize eSS rat line studying at what age renal and hepatic morphological alterations appear. Male eSS rats 70-400 days of age were maintained with tap water and standard rat chow pellets, *ad libitum*. Euthanizes were performed every 30 days from 70 to 400 days of age. Livers and kidneys from two animals of each age were removed and histological processed. Slices of both tissues were stained with H&E. Direct Red 80/Picric Acid and PAS. All tissues were compared with the ones of Wistar male rats of the same age to discard histological alterations due to animal age. Livers of eSS rats showed glycogen content diminution through the time; however, neither steatosis nor fibrosis was seen. Kidneys had morphological alterations since 120 days of age with low intraglomerular menssangial cells increment in some sub capsular corpuscles. At 150 days leucocitary infiltration was seen surrounded arcuate vessels. After 240 days, abundant leucocitary infiltration was found together with thick basal membranes of some tubules and in the parietal layer of many renal corpuscles. Abundant PAS positive material was inside collector tubules, blood vessels and an incipient increment of collagen fibers was present through the renal parenchyma. Focal and segmentary renal corpuscles alterations, fibrosis, leucocitary infiltration and signs of tubular necrosis were markedly after 400 days. Wistar rats had no morphological alterations at any age studied. We concluded that morphological alteration in eSS rats, principally in the kidneys, began at 120 days of age and increased progressively with the age of the animal.

A22
SEMINAL PARAMETERS EVALUATION IN INFERTILE MEN WITH AND WITHOUT GENITAL INFECTIONS

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Pathogens involved in male genital tract infections cause diseases in epididymis and annexed glands and can be transmited through insemination procedures. The objective of this study was to analize whether there are differences in the seminal parameters in infertile men with and without genital infections. Bacterial cultures and semen analysis according to WHO guidelines (2010) were performed on semen samples of 140 male patients attended at the "Eva Perón" School Hospital for fertility evaluation in the period from 2010 to 2013. Microbiological studies were carried out according to the methodology proposed by Santoianni et al. (first urine stream/urethral secretion and semen) based on the Stamey and Meares technique. Cultures showed absence of microorganisms in 61.4% of the samples, presence of at least one pathogen in 32.1% and normal genital tract flora (such as monoflora and count of 10^4 or higher) in 6.4% of the total. There were no significant differences in volume of ejaculate, pH value, viscosity and citric acid concentration between different groups. In the three groups, total sperm count was decreased. The incidence of multiple morphological abnormalities can be more useful than a simple assessment of the percentage of normal sperm. Teratozoospermia index (TZI) is defined as the number of abnormalities present per abnormal spermatozoon. Patients with at least one pathogen presented TZI values higher than patients without microorganisms or normal genital tract flora. This data suggest that a sperm culture may be considered in the early stages of the study of the infertile patient. Early diagnosis of an infectious disease could be useful for a suitable treatment for couples with reproductive failure.

A23
TRANSPLANT OF HEPATOCYTES ISOLATED FROM LIVERS WITH PRENEOPLASTIC FOCI. POTENTIAL RIKS FOR RECIPIENTS

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Hepatocyte transplantation (HT) is used as a temporal bridge till hepatic transplantation. If the donor (D) has subclinic hepatic preneoplastic with foci of altered hepatocytes (AHF) could be dangerous for recipients (R). We studied if R developed AHF after they were transplanted with hepatocytes isolated from donors with subclinic hepatic preneoplasia; we correlated the number (nº) of hepatocytes transplanted with the nº of AHF found in R; we studied the recipient hepatic morphology and physiology post transplant. Wistar male adult rats were used as D and as R. D were subjected to a two-phase model of carcinogenesis induction. Their hepatocytes were isolated and transplanted to R which had been partially hepatectomized. R received either 30.000 (G30) or 150.000 (G150) total hepatocytes *via spleen.* Sham group was the control. Rats were euthanized 7 and 21 days post transplant. Che, ALT, AST and ALP

activities were measured. Samples from the entire livers were histological processed. AHF were detected immunohistochemically using anti rGST-Pi. AHF obtained in R were counted in liver sections and the area occupied by AHF was computer determinate calculating the number of AHF/cm$^{2.}$ Few and isolated AHF were obtained in G30 and G150 groups and no statistical differences were obtained taking account neither the number of cells transplanted nor the time of euthanize. The enzymes values were normal at 21 days after transplant. Hepatic morphology was no altered. We concluded that under our conditions a D with AHF would not be of great risk for R.

A24
USE OF FALSE NEAREST NEIGHBORS QUANTIFIER IN THE STUDY OF NORMAL ERYTHROCYTE POPULATIONS

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Erythrocytes are the most abundant cells in blood and its primordial function is oxygen and carbon dioxide transport. In this work, a simple alternative based on temporal series is described in order to obtain a quantitative description of erythrocyte viscoelasticity and its alterations. Photometric series corresponding to erythrocyte membrane fluctuations are generated by a device developed in Applied Optics Group from IFIR: Erythrocyte Rheometer. Biosignals with delay coordinates generate a space with dimension D_e (embedding dimension), where the whole process dynamics can be defined uniquely. When the chosen working dimension D is $D<D_e$, some points appear closer than they really are in D_e (so called false nearest neighbors). The reason of this effect is that the process is not unfolded in D but projected over a minor space than needed. We propose a novel quantifier based on D_e in order to characterize a population of blood samples obtained from healthy donors as a preliminary approach to study erythrocytes populations in contact with pathogen parasites. D_e was calculated as the minimal dimension in which false nearest neighbors percentage is less than 1%. In order to achieve the proposed aim, human RBCs obtained from healthy type O donors were suspended in a high viscosity medium (pH 7,4; osmolarity: 295 mOsm/kg; viscosity: 18 cP). Ten RBCs samples generated 100 biosignals, half of them corresponding to a shear process and half of them corresponding to a relaxation process. A relative percent frequency of 77% was obtained for D_e=7, with minor values for D_e =8 (20%) and D_e =9 (3%). Thus, this quantifier provides a uniform value for a control group of samples. There is good agreement about the existence of surface alterations on erythrocytes surface of parasites and false nearest neighbors parameter. These preliminary results will be complemented with new experiences over samples treated with pathogen parasites in order to corroborate the working hypothesis.

Facultad de Ciencias Médicas

A25
ALCOHOL ACTION ON MURINOMETRIC MEASURES AT ß RATS

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Obesity is a chronic disease resultant of the interaction of genetic, metabolic, behavioral and cultural factors. The treatment is based on the modification of unhealthy behaviors, such as alcohol intake (OL). Considering that animal models are used to study the consequences of alcoholism, we decided to evaluate the effect of OL on direct and indirect indicators of overweight in rats β. Six male β rats 70 days old (O), received every day a load of 3,25 g of ethanol/kg of body weight through an orogastric tube using an alcoholic solution (13% v/v) as vehicle. Control group (A; n=7) received water by the same way. Both groups were fed normal feed. After 2 months of treatment, rats were euthanized and their tibias were removed. Data were analyzed using Student test. Results are expressed as mean±SD: Indirect overweight Indicators: Body weith (BW;g): A:380.6±9.7 vs O:344.8±7.5, p=0.033; abdominal circumference (AC;cm): A:17.37±0.39 vs O:16.13±0.3,p=0.063; thoracic circumference (TC;cm): A:14.63±0.38vs O:13.50±0.20, p=0.062; ICT (AC/nasoanal length (NL;cm)): A:0.78±0.02 vs O:0.75±0.02, p=0.334; AC/TC:A:1.19±0.04 vs O:1.19±0.01,p=0.974; Lee index (cube root of the BW/NL): A:0.33±0.01vs O:0.33±0.002, p=0.803; BMI (BW/NL^2):A:0.77±0.03 vs O:0.75±0.01, p=0.678; Direct measure of obesity: retroperitoneal fat pads: A: 2.82±0.16 vs O: 2.54±0.06, p=0.165. Accumulated food intake:(g): A: 1788.9±101.2 vs O:1641.5±174.0,p=0.10; energy intake: energy provided by food plus energy provided by alcohol (Kcal): A:6060.8±342.9 vs O:5944.1±589.8,p=0.68. Neither direct nor indirect measures of obesity differ between groups. O reached lower biomass and total length. The stability of indicators of overweight at group O could be due compensation in caloric intake.

A26
ASSESSMENT OF THE RENAL HISTOLOGY OF OBESE β RATS FED A HIGH FRUCTOSE DIET

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Numerous studies have reported a relationship between the increase in the prevalence of obesity and its comorbidities with the consumption of foods rich in sugars, particularly fructose, mostly in the form of high fructose corn syrup. Overweight, obesity, insulin resistance, type 2 diabetes, dyslipidemia, hyperuricemia, nonalcoholic fatty liver and kidney damage are reported as harmful health effects of high fructose intakes.Fructose-induced metabolic syndrome has been associated with glomerular hypertension and renal microvascular damage in rats. The objective of this study was to detect changes in kidney histology in obese β rats fed a high fructose diet. Two groups of rats 70 days old (n = 5 each group) ate ad libitum for 90 days either diet C (formulated as recommended by the American Institute of Nutrition AIN 93) or diet F (AIN 93 modified by replacing 50% of the corn starch by fructose). At autopsy kidneys were removed and processed according to routine histological techniques. The preparations were observed under an optical microscope to analyze glomeruli, tubules, blood vessels and interstitium. No significant morphological differences between both groups were found. In these β rats high fructose diet did not induce changes in renal histology different from those induced by the control diet. The slight changes observed in both groups may be related to the incipient diabetes that appears after the obesity onset. Probably kidney injury due to high consumption of fructose described in other murine models needs a longer dietary intervention to be expressed in this line.

A27
CARRIAGE OF *Staphylococcus aureus* IN MEDICAL STUDENTS AT THE NATIONAL UNIVERSITY OF ROSARIO

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Staphylococcus aureus (SA) is part of the habitual skin, oropharynx, and nasal mucosa microbiota in healthy people, fact known as carriage stage. This condition can be altered and local infections or severe invasive pathologies can be produced. These bacterias can be transferred to other individuals from nasal cavities. Medical students and health personnel constitute fundamental links in the spreading process of this bacteria. The aim of this study was to determine the frequency of SA carriers, and to identify methicillin susceptible (MSSA) and methicillin resistant (MSRA) strains in medical-student group at National University of Rosario (UNR). The Population studied involved 756 students, to whom samples were taken by nasal swab. The collected samples were cultured onto mannitol salt agar. The identification was done used conventional tests and the antimicrobial susceptibility by the diffusion method according standards of Institute clinical and laboratory (CLSI). A closed survey was made among students in order to analyze at second stage possible variables that potentially affect SA nasal carriage. Of the total of 756 (100%) analyzed samples, in 178 (23,5%) SA was isolated; and 10 samples became MRSA. These 10 samples represent a 5,6% of the total of isolated SA and a 1,3% of the studied population. All the strains isolated are CA-MRSA. These studies contribute not only to nosocomial patients' transmission control but also to decrease the spreading of this bacteria outside hospital environment.

A28
COMPARISON OF BONE RESISTANCE OF OBESE β RATS FED DIETS WITH DIFFERENT LIPIDIC QUALITY

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The increase of health disorders in modern human societies, such as obesity, heart disease and osteoporosis, has suggested that all these pathologies may be due to the deficit of polyunsaturated fatty acids that western diets generally present. Cientific studies have reported that the ratio omega-3/omega-6 in diet seems to play an important role on bone health. We decided to evaluate and compare the bone resistance of obese β rats that fed diets with different lipidic quality: A: control ain-93, sunflower oil, rich in linoleic acid; J: ain 93 modified, replacing sunflower oil by bovine juice rich in saturated fatty acids and W: ain 93 modified, replacing sunflower oil by bovine juice and adding enough fish oil to achieve 0. 025 g of polyunsaturated fatty acids w3 / 100g of food, the w6/w3 ratio was 4:1. After 90 days of treatment, the rats were euthanized and femurs were extracted. Bone resistance was evaluated by biomechanical tests. Results are as mean ± SD; different superscripts indicate significant differences. In compression test there were no significant differences between groups in any of the parameters studied. In the bending test, group J display a decrease in: fracture load ffx(N):A(n=11):142.3±11.8^{a}; J(n=11):125.0±7.3^{b}; W(n=11):133.9±11.9^{a,b}; p=0.00; and in fracture maximum load ffmx(N):A:146.5±12.3^{a};J:129.2±7.7^{b}; W:135.6±

$11.9^{a,b}$; p=0.013. These results show that in group J bone was less resistant to fracture than in group W in which a compensating effect of saturated fatty acids deleterious activity was observed.

A29
EFFECT OF ALCOHOL CONSUMPTION ON BONE MINERAL DENSITY IN ß RATS

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Bone mineral density (BMD) of an individual depends on both their genes and their eating habits. Among the latter, alcohol consumption becomes important because if it is chronically excessive, it can negatively affect bone mineral density since the inhibition that alcohol produces in nutrients absorption. The aim was to evaluate BMD in tibias of β rats that were daily given alcohol. Six male β rats 70 days old (O), received every day a load of 3,25 g of ethanol/kg of body weight through an orogastric tube using an alcoholic solution (13% v/v) as vehicle. Control group (A; n=7) received water by the same way. Both groups were fed normal feed. After 2 months of treatment, rats were euthanized and their tibias were removed. We used an X-Ray equipment (70 kV) and a concentrations of Ca pattern. On scanned images BMD measurements were performed using J Image software. Data were analyzed using Student test. Results are expressed as mean±SD: Weight Gain(g):O:119.8±3.2 vs A:146.8±7.7 p=0.01; Accumulated Food Intake:(g): O:1641.5±174.0 vs A:1788.9±101.2 p=0.10; (Kcal): O:5561.5±589.8 vs A:6060.8±342.9 p=0.10; Energy Intake: energy provided by food plus energy provided by alcohol (Kcal):O:5944.1±589.8 vs A:6060.8±342.9 p=0.68; Cortical BMD: O:10.51±1.11 vs A:11.55±1.17 p=0.02; Trabecular BMD: O:14.60± 2.14 vs A:16.97± 3.09 p=0.03. Energy input became similar in both groups, since animals in O group reduced their feed intake. Inhibition of some nutrients absorption induced by ethanol may explain less body weight gained and lower cortical and trabecular BMD in O group.

A30
EFFECT OF DIETARY FAT QUALITY ON BONE MINERAL DENSITY OF OBESE β RATS

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Fatty acids omega-6/omega-3 high ratio in western diets might contribute to increase the incidence of obesity, heart disease and osteoporosis. The aim of this study was to compare bone mineral density (BMD) in tibias of β rats fed diets with different quality of fat. male obese β rats 70 days old received for 90 days: A(n=6): AIN93 (rich in linoleic acid); J (n=7): AIN93 modified by adding saturated fatty acids and W (n=7): 93 AIN modified by adding saturated fatty acids and enough omega-3 polyunsaturated fatty acids to achieve 0.025 g / 100g of food. Omega-6/omega-3 ratio was 4:1. After treatment rats were euthanized and their tibias were removed. We used an X-Ray equipment (70 kV) and a concentrations of Ca pattern. On scanned images BMD measurements were performed using J Image software. Data were analyzed by ANOVA test. Results are expressed as mean±SD. There were no differences in: Cortical BMD ($mgCa/cm^2$): A:19.02±4.95; J:19.31±4.63; W:17.29±5.28; p=0.5375, nor in trabecular BMD ($mgCa/cm^2$): A:19.06±5.66; J:21.50±7.69; W:18.06±4.75; p=0.3439. We conclude that along the studied period the addition of calcium to the bone was not affected by dietary omega-3 low proportion. These results do not match those of other authors (Lau, 2013) who have reported increased bone strength in animals fed enriched omega-3 diets. Probably, bone resistance is more related to histomorphometric than to mineral density changes. To assess the importance of microstructure on bone strength histomorphometrical studies will be performed.

A31
EFFECT OF *Ligaria cuneifolia (Lc)* PROANTHOCYANIDINE ENRICHED FRACTION ON PLASMA CHOLESTEROL LEVELS AND BLOOD FLUIDITY IN WISTAR RATS FED WITH HYPERLIPIDEMIC DIET

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Previously, we showed in the rats that intraperitoneal (i.p.) injection of *Lc* crude extract produce a plasma cholesterol (Cho) decrease and blood viscosity increase. Proanthocyanidine (P*Lc*) was purified to analyze its effect on Cho and blood fluidity in adult male Wistar rats

(aged 70 days, n=24) fed with standard chow diet added with 40% bovine meat juice during 28 days. The rats were administered i.p. each 24hr during 3 days with either physiological solution (controls C, n=12) or P*Lc* 3mg /100g body weight (treated T; n=12), in day 4 they were anesthesized i.p. with Ketamine/Xylazine (100mg/kg/3mg/kg) to obtain blood samples by cardiac puncture. Results (mean ± SD). Plasma Cho (mg %): C:97.50±4.9, T: 53.7±4.4**; ChoHDL: C:25.00±0.87; T:24.00±0.79 (n.s.). ChoLDL: C:24.12±1.20; T:19.03±0.33** ; Triglycerides: C:164.62±29.55, T:83.30±6.63**; Blood Viscosity standardized to a 45% hematocrit, C:6.39±0.32, T:5.85±0.08* ; Rigidity Index: C:6.03±0.20; T:4.84±0.25*; Mean Corpuscular Volume (μm^3): C:70.84±0.46; T:62.43±1.19* (*p<0.05; **p<0.001, Student's *t* Test for unpaired data). P*Lc* treatment produces a plasma decrease of both Cho and ChoLDL, lowering blood viscosity and erythrocyte rigidity due to a decrease of globular volume in rats fed with a hyperlipidemic diet.

A32
ERYTHROCYTE AGGREGATION (EA) AND PLASMATIC FIBRINOGEN (Fg) IN ADOLESCENTS WITH OVERWEIGTH AND OBESITY. PRELIMINARY RESULTS

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Several studies have pointed out that overweight and obesity has been increasing among children and adolescent population. When the obesity condition appears in adolescents the probability of persistence into adulthood is about 80%. On the other hand, obesity is a recognized risk factor to cardiovascular disorders and EA as well as Fg has been studied in obese patients with contradictory results. We studied males and females adolescents, with 11 to 19 ages, without known metabolic diseases. They were classified according to BMI in: normal weight (n=17): ≥10≤85; overweight (n=5): ≥85≤95 and obese (n=7): ≥95. The EA was determined by optical method in suspensions of red blood cells (RBs) in plasma and RBs in Dextran 500 2% in saline (Htc: 40%) We determined: T (estimating the size of the aggregates) and V (estimating the initial rate). Fg was determined by trombine coagulation. Results were analized with ANOVA test and expressed as media ± standar deviation. Significance: p<0.05. Results: EA: in plasma: T: normal weight: 1.07±0.58 ns; overweight: 1.40±0.30 ns; obese: 1.38±0.29ns; V: normal weight: 0.178±0.02ns; overweight: 0.165±0.06ns; obese: 0.18±0.05ns. In dextran: T: normal weight: 1.77±0.11ns; overweight: 1.75±0.07ns; obese: 1.76±0.08ns; V: normal weight: 0.74±0.35ns; overweight: 0.66±0.12ns; obese: 0.83±0.51ns; Fg (mg/dl): normal weight: 296±32ns; overweight: 317±35ns; obese: 298±35ns. According our results there are no difference in T and V in plasma between groups. These findings are consistent with no differences found in Fg. On the other hand, the study with dextran as aggregating agent (only cellular factors are considered) showed no difference at all groups. Even thought our results are coincidence with obtained by other author, we consider necessary to continue the study.

A33
GLYCOLIPIDIC PROFILE AND ADIPOCYTE SIZE IN β RATS

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Obesity is characterized by an excess of fat mass. The associated risks are partly due to adipose tissue location, rather than to its total amount. Adipose tissue expansion shows characteristically two mechanisms: hypertrophy and hyperplasia. The aim of this work was to evaluate the glucolipidic profile and the size of retroperitoneal adipose tissue adipocytes in different age groups in β rats. The variables studied in 70, 100 and 200 day-old β male rats (6 per group) were: body weight; body mass index (BMI: body weight/noseanal length²); serum levels of glucose (G) , cholesterol (C) and triglyceride (TG); adipocytes area and perimeter. These two last were analyzed on digital images of histological sections.The results are expressed as mean±SD and were analyzed by ANOVA. At70, 100 and 200 day-old respectively: body weight (g): 241.8±8.75, 330.8±7.83, 407.5±18.91 (p<0.0001); BMI (g/cm^2): 0.5348±0.0491, 0.6603±0.0231, 0.7598±0.0547 (p<0,0001);G (mg/dl): 100.8±7.36, 109.7±6.89, 133.5±15.28 (p:0.0002); C(mg/dl): 87.50±3.89, 95.17±7.08, 112.5±17.94 (p:0.0052); TG(mg/dl): 135.0±35.32, 141.5±33.41, 186.0±50.48 (ns). Bonferroni multiple comparisons: body weight (70vs100, 70vs200, 100vs200:p<0.001); BMI (70vs100, 70vs200:p<0.001, 100vs200:p<0.01); G (70vs100:ns, 70vs200: p<0.001, 100vs200:p<0.01); C (70vs100: ns, 70vs200:p<0.01, 100vs200:ns). At 70, 100 and 200 days old (n=100 per group): adipocyte area (μm^2): 2440±1160, 2747±946.5, 5893±2416 (p<0.0001); adipocyte perimeter (μm): 214.0±38.23, 220.5±38.84, 305.6±57.51 (p<0.0001). Bonferroni multiple comparisons: area: (70vs100: ns, 70vs200 y 100vs200: p<0.001); perimeter: (70vs100: ns, 70vs200 y 100vs200: p<0.001). The increased adipocyte size would support one of the mechanisms involved in adipose tissue expansion. At ages evaluated, the changes in this tissue were accompanied by a moderate modification of glucolipidic profile.

A34
GLYCOLIPIDIC PROFILE OF SPONTANEOUSLY DIABETIC RATS (eSS) AND ITS RELATION WITH ANIMAL AGE

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Rats IIM/FmeSS (eSS) develop diabetes mellitus type II (DMTII) spontaneously. It has been described that male rats suffer hypertriglyceridemia and hypercholesterolemia at 12 months of age. The aim of the present work was to characterize eSS rats studying their glucolipidic profile in relation with the age of the animals studied. Each eSS rat (n=6) was control of itself. Glucose (G), cholesterol (C) and triglycerides (TG) were determinated with an enzymatic colorimetric method in fresh serum. The same variables were studied in male Wistar rats (n=3). The results were analyzed by ANOVA and Tukey comparisons when significant differences were found (p<0.05). At 70, 120, 240, 280, 400 day-old respectively, in mg/dl, in eSS rats, G: 109.8±7.9, 113.0±5.5, 148.2±8.7, 145.2±5.3 , 149.0±8.0, 138.3±7.3 (p:0.001); C: 83.5±1.9, 87.7±5.0, 120.8±12.4, 164.8±8.5, 215.5±25.0, 359.4±11.6 (p:0.0001); TG: 121.0±6.3, 156.3±17.5, 356.5±55.5, 453.8±103.0, 734.7±131.8, 1266.8±154.9 (p:0.0001). At 98, 165, 180, 210, 260, 340 day-old respectively, in mg/dl, in Wistar rats, G: 86.7±7.1, 106.0±1.2, 107.0±2.5, 109.3±7.8, 99.0±2.0, 112.3±4.1; C: 62.3±0.9, 78.7±4.5, 80.3±6.9, 80.0±4.6, 115.7±8.0, 99.7±3.8; TG: 63.0±20.5, 102.3±12.4, 63.3±4.3, 78.3±9.2, 77.0±3.5, 95.0±11.7.Serum levels of glucose, cholesterol and triglycerides in eSS rats increased significantly with age. In Wistar rats slight significant changes were observed in glycemia values and an increment of cholesterol values in a later age (260 days) but no significant differences were measured in trygliceride values. We conclude that in eSS rats the glycemia increased at 200 days (5 months) and lipid alterations began at 240 days (6 months).

A35
METHICILLIN RESISTANT *Staphylococcus aureus* (MRSA) NASAL CARRIAGE: THERAPEUTIC CHOICES

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Staphylococcus aureus (SA) can colonize nostrils and skin in 20-40 % of adults. Besides, it can also cause from skin infections to potentially deadly systemic infections. Both this colonization rate as well as antibiotic resistance have increased during the last years. Health care workers and medical students –if carriers of SA- may spread it through their hands and fomites. Therapeutic alternatives to treat MRSA infections are macrolides, lincosamides, streptogramines (MLSB), quinolones and cotrimoxazol (TMS). Our aim was to determine the rate of resistance to those antibiotics of MRSA isolates from nasal carriage in students of the School of Medicine UNR. Swabs were taken from both nostrils, plating them on Mannitol salt agar. Identification and antibiotic susceptibility were determined by standard metabolic tests and the Clinical and Laboratory Standards Institute (CLSI) guidelines. Seven hundred fifty six samples were processed, isolating SA in 178 of them, of which 10 turned out to be MRSA, all of them were susceptible to quinolones and TMS. Six of the MRSA were also resistant to MLSB, 4 displaying inducible resistance and 2 showing a constitutive phenotype. According to these results, quinolones and TMS - but not erythromycin and clindamycin- are valid alternatives for the empirical treatment of MRSA infections.

A36
NASAL CARRIAGE OF COMMUNITY ASSOCIATED METHICILLIN RESISTANT *Staphylococcus aureus* (CA-MRSA) IN MEDICINE STUDENTS AT NATIONAL UNIVERSITY OF ROSARIO: COMPARISON AMONG DIFFERENT COURSES

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Staphylococcus aureus is a pathogenic microorganism that can occasionally be part of the habitual human microbiota, fact known as carriage. Methicillin resistance constitutes a nosocomial and outpatient problem. The aim of this investigation was to determine nasal carriage of CA-MRSA in medicine students and to research if relationship between carriage and realization of medical practices exist. A nasal swab sample was taken to a population of 421 students during the year 2015. The samples were cultured onto mannitol salt agar. Identification was done used conventional tests and the antimicrobial susceptibility by the diffusion method according standards of Institute Clinical and Laboratory. Of 421 students, 298 belonged to “Health Promotion” and “Disease Prevention” courses in which no medical practices were realized and 123 students attended “Diagnosis, Treatment, Recovery” and “Final Practice” where medical practices were done. In the first group SA was isolated from 68 samples (22,82%) of which 66 (97,06%) were methicillin susceptible (MSSA) and 2 (2,94%) were CA-MRSA. In second group, SA was isolated from 28 samples (22,76%) of which 24 (85,71%) were

SAMS and 4 were CA-MRSA (14,29%). Results allow us to infer that the realization of medical practices constitutes a risk factor for the colonization. Reinforcement in biosecurity measures is needed to reduce bacterial spreading.

A37
NASAL CARRIER OF METHICILLIN-RESISTANT STAPHYLOCOCCUS *aureus* IN STUDENTS OF MEDICINE AT UNIVERSIDAD ABIERTA INTERAMERICANA IN ROSARIO

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Staphylococcus aureus (SA) is one of the most frequent isolated pathogens on clinical samples. Asymptomatic nasal carriers of methicillin-resistant *staphylococcus aureus* (MRSA) have been identified as a risk not only for nosocomial infections but for community-acquired infections as well. Nowadays their interest is due to the increase of isolation frequency of MRSA being one of the main causes of outbreak for nosocomial infections. The objective was to establish the prevalence of nasal carriers of MRSA and their antimicrobial (ATM) susceptibility to students of medicine at Universidad Abierta Interamericana in Rosario. A cross-section, stratified random and representative sampling study was carried out on sample size of 242 students of medicine of every year of the course. The samples were taken within the university. A sample of nasal swab of both nares for each student was taken. Sterile Dacron swabs were used and they were kept at room temperature on Stuart transport medium to prevent drying and loss of organism and they were sown before eight hours of collection. They were cultured in blood agar and aerobiosis chromagar medium at 37º C for 24-48 hours. For identification, conventional metabolic tests were used and a susceptibility test was carried out to antimicrobial (ATM) using the diffusion method referred to Clinical and Laboratory Standards Institute (CLSI). From the study population SA was retrieved from 52 samples (21.4%), out of which 49 (20.25%) ended up being methicillin susceptible and 3 (1.24%) community-acquired methicillin-resistant (CA-MRSA) that represent 5.77% of the population colonization. Strains with the hospital phenotype of MRSA (HA-MRSA) were not isolated. The findings are useful in view of the seriousness of the clinical manifestations that this pathogen can cause and as an epidemiological security measure, biosecurity tools and prevention of infections both hospital-acquired and community-acquired ones. It was important to stablish the prevalence of MRSA carriers on the studied population. The topical treatment with mupirocin is a worthy alternative for carriers decolonization, although it cannot guarantee the permanent eradication of the microorganism. The judicious ATM use will reduce morbidity and mortality and the onset of resistant strains.

A38
OSMOTIC FRAGILITY, CELLULAR SHAPE AND MEMBRANE CHOLESTEROL OF RED BLOOD CELLS FROM ADOLESCENTS WITH OVERWEIGHT OR OBESITY. PRELIMINARY ASESSMENT

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In this preliminary study, we analyzed de osmotic fragility (OF), cellular shape (CS) and membrane cholesterol (Chom) of red blood cells (RBCs) from adolescents, age 11 - 19 years old, without known metabolic pathologies and classified according percentile BMI: normal weight ≥ 10 y < 85, overweight ≥ 85 y < 95 and obese ≥ 95. Blood of 36 patients (24 non- obese, 5 overweight and 7 obese) were studied. It was determinate: OF of RBCs, using photometry at 540nm which obtained the parameter x_{50} (NaCl concentration where 50% of hemolysis was obtained); CS, by microscopy and it was informed a morphological index (MI) and Chom: by removal membrane lipids with propanol and chloroform and colorimetric determination. Statistical analysis: Anova. The results were expressed as media ± SD considering significative if $p<0,05$. Results: OF (mM) Normal weight: 71.06±4.10 ns *; Overweight: 68.47±4.21 ns*; Obese: 63.77±6.94*. CS (MI): Normal weight: -0.23±0.32*; Overweight: -0.88±0.67ns*; Obese: -0.66±0.47* ns. Chom (g%): Normal weight: 0.56±0.23*; Overweight: 0.78±0.29 *; Obese: 1.21±0.80*. *: significant difference. ns: non significant. The increase of Chom is consistent with the increased BMI; OF does not differ between the first two groups but obese show an increment of the osmotic resistance. The CS tends to stomatocitics shape given by more negative MI. Chom contained should cause intern lipid hemilayer extension producing a change in membrane response at osmotic *stress* and increasing tendency to stomatocites. Studies will be undertaken to complement the recent results.

A39
PRELIMINARY STUDY OF THE EFFECT OF INFECTION WITH THE NEMATODE *Trichinella spiralis* (Ts) ON M-406 MAMMARY ADENOCARCINOMA DEVELOPMENT IN CBi-IGE MICE

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T. spiralis has the unique ability to "settle" in its host creating and hiding in a new cell type, the nurse cell. From this immunologically privileged site, Ts orchestrates a long-term molecular dialogue with the host through its excretory-secretory products and successfully modulates immune responses against the parasite, as well as responses to unrelated antigens. The aim of this work was to study the possible antitumor and antimetastatic effect of Ts infection in CBi mice (n=32) challenged with the syngeneic transplantable mammary adenocarcinoma M-406. Mice were infected with 10 L1 Ts larvae/g body weight and 15 days post-infection were injected subcutaneously with the tumor (treated group, **T**). Uninfected animals inoculated with M-406 on the same date were used as controls (**C**). Mice overall health was monitored three times a week and tumor volume (cm^3) was calculated with the formula $v=0.4\ (Dxd^2)$, where D=largest diameter (cm) and d=smallest diameter (cm). The tumor doubling time was estimated using the exponential growth curve. All mice were sacrificed by CO_2 over-exposure when the first of them reached the maximum allowed tumor size (day 15 post-challenge). After sacrifice, lungs were excised and fixed in Bouin to determine, by direct observation, the number of macroscopic metastases. Ts infection did not affect significantly tumor volume nor tumor doubling time. The parasite infection reduced the proportion of mice with at least one lung metastasis (**C**: 94%, **T**: 60%, P=0.027) and the total number of metastases per mouse (median and range; **C**: 6 (0-138), **T**: 2 (0-6), P=0.008). The results suggest that the CBi-IGE + M-406 system is a promising experimental model for the characterization of Ts antitumor activity.

A40
RESEARCH ON THE CONTRIBUTION OF FLAVONOIDS IN FOOD EATEN BY UNIVERSITY STUDENTS OF THE HEALTH FIELD IN THE CITY OF ROSARIO

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Flavonoids are phenolic compounds belonging to the non – energetic part of the human diet. Its beneficial properties are due to its antioxidant activity and the elimination of free radicals. They play an essential role protecting against oxidative damage and therapeutic effects in coronary syndrome. The goal of this work was to estimate flavonoids consumption by university students. In order to do so, an anonymous and voluntary survey was given to university students of public faculties in the health field, both state and private. To analyse it, we considered the flavonoid content according to the Argentine Food Code in: onion (347mg/kg), apple (23 – 30 mg/kg), lettuce (308 mg/kg), blueberry (249 mg/kg), tomato (20 – 150 mg/kg) and cabbage (320 mg/kg). An age range from 18 to 25 years old was selected and they were connected based on gender and product consumption frequency. The portion considered was between 100 and 150 gr of food and it was also considered that the average value of consumption is 23 mg/day.. The products with a higher amount of flavonoids were onion, cabbage, lettuce and blueberry. Even though, the intake is modified according to quantity consumed, it can be estimated that groups 1, 2, 5 and 6 consume between 23 and 28 mg/day of flavonoids in a salad with tomato, lettuce and onion. These values indicate that the input of flavonoids from food consumed daily and weekly by university students is enough to cover the recommended daily consumption. Without other important risk factors, if this level of intake is sustained, this would contribute to protect this population from potential oxidative damage in the future and this can result, for example, in a decrease of the risk of suffering coronary diseases.

A41
Streptococcus pneumoniae ISOLATED FROM NASOPHARYNX: ANTIBIOTIC SUSCEPTIBILITY AND SEROTYPE DISTRIBUTION.

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Streptococcus pneumoniae (*S. pneumoniae*) nasopharingeal carriage is of importance since it is involved not only in the development of invasive processes but also in the person-to-person spread. The aim of this study was to determine the prevalence of nasopharingeal colonization in healthy children, learn about antibiotic susceptibility and the circulating serotypes prior to the incorporation of the vaccine PCV-13.

One nasopharyngeal sample was obtained from every included kid prior to parent's consent. The *S. pneumoniae* was isolated and identified using standard laboratory procedures. The strains susceptibility was tested using the agar dilution method described by the National Committee for Clinical Laboratory Standards. The strains were serotyped by their quellung reaction
203 (37%) of 550 children were colonized by *S. pneumoniae*, 47% of which were susceptible to all the antibiotics tested, 25% were resistant to penicillin, 20% resistant to erythromycin and 38% resistant to sulfamethoxazole/trimethoprim. Seventy-one percent of 172 serologically typified isolates were included in the vaccine coverage; being the most frequent serotype 14 (18%), serotype 6A (16%) and serotype 23F (9%). The currently used vaccine includes the serotypes linked to invasive sickness, only future epidemiological surveillance would allow us to make conclusions on the 29% of not included serotypes.

A42
SUGAR SOLUTIONS INTAKE: EVALUATION OF THE EFFECT ACROSS MURINOMETRICS PARAMETERS.

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In Argentina, the average intake of drinks is distributed: 21 % water, 29 % flavored drinks without calories and 50% sugary drinks. The habit of replacing the water of hydration by sugary drinks, could be one of the promoters of the increase in the proportion of overweight and obese individuals. We evaluated the effect of the supply of glucose and fructose incorporated into drinking water on size and weight in obese rats line β , using indirect and noninvasive methods. 21 animals 70 days of age were randomized to one of the following groups: G: glucose added to drinking water in a concentration of 20g/dl; F: fructose added to drinking water, concentration of 20 g/dl; C: no added water. The treatment was kept for 90 days, before and after the treatment, not differences were detected before ni desp at: Biomass (p=0.958 and 0.708), Lee Index (p= 0,578 and 0.543), Body Mass Index (p=0.775 and 0.773) and waist-height index (p=0.947 and 0.828). The relative weight of the fat pads were significantly higher in G with respect to C and F: GP (g%): G:2.51±0.18; F:2.06±0.18; A:1.92±0.32 (p=0.001) y GR (g%): G:3.88±0.27; F:2.96±0.31; A:2.58±0.49 (p=0.000).Weighing the fat pads revealed differences couldn't be detected through murinometric indices.

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A43
NATIVE SPECIES OF THE APIACEAE FAMILY IN THE PROVINCE OF SANTA FE (ARGENTINA), Part I.

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The Family Apiaceae (= Umbelliferae) belongs to the Order Apiales (according to APG-III). These are annual or perennial herbaceous species, usually with alternate leaves, entire or deeply divided with sheathing leaf bases. The actinomorphic pentamerous flowers are arranged in compound umbels or capitules, inferior ovary, two carpels and two locules. Fruit schizocarp, with two mericarps, is supported by a carpophore. The objective of this study is to continue the taxonomic study of the Apiaceae family and to analyze the native taxa present in Santa Fe and its distribution. The methodology included: literature review, herbaria revision with important collections of the province (SF, SI, UNR), observation of most species in their habitat and lab work. In Argentina the family is represented by 38 genera, of which 16 are present in Santa Fe, nine of them with native species. With a single species each, they are: *Ammoselinum* Torr. & A. Gray (*A. rosengurtii* Mathias & Constance); *Bowlesia* Ruiz & Pav. (*B. incana* Ruiz & Pav very common throughout the province); *Centella* L. (*C. asiatica* (L.) Urb., rare in the province.); *Cyclospermum* Lag. (*C. leptophyllum* (Pers) Sprague.); *Daucus* L. (*D. pusillus* Michx., found only in the departments Gral Lopez and San Javier) and *Lilaeopsis* Greene (*L. carolinensis* JM Coult. & Rose in the center of the province). With two species is *Apium* L.: *A. prostratum* Labill. (only collected in the department Las Colonias) and *A. sellowianum* H. Wolff (common across the province, characterized by its strong smell). Finally *Hydrocotyle* L., with six reptant species, with peltate leaves, adapted to aquatic environments with clayish soils. One of them is *Hydrocotyle bonariensis* Lam. ('redondita de agua'), which appears throughout the province. The others are commonly found in the east-central and NE Santa Fe: *Hydrocotyle callicephala* Cham., *H. exigua* (Urb.) Malme, *H. modesta* Cham. & Schltdl., *H. pusilla* A. Rich.

and *H. ranunculoides* L. f. Finally, the genus *Eryngium* L. is represented by 17 species, which because of its complexity will be discussed in another work.

A44
NATIVE SPECIES OF THE BRASSICACEAE FAMILY IN THE PROVINCE OF SANTA FE (ARGENTINA)

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The family Brassicaceae (=*Cruciferae*)) belongs to the order Brassicales (according to APG-III). These are annual or perennial herbaceous species, with basal rosette leaves and upper alternate. The flowers are tetramerous arranged in racemes. Fruit siliqua or silicula, dehiscent or indehiscent. The objective of this study is to continue the taxonomic study of the Brassicaceae family and to analyze the native taxa present in Santa Fe and its distribution. The methodology included: literature review, herbaria revision with important collections of the province (SF, SI, UNR), observation of most species in their habitat and lab work. In Argentina the family is represented by 61 genera, of which 16 are present in Santa Fe, four of them with native species. The first two with a single species each: *Descurainia erodiifolia* (Phil.) Prantl ex Reiche (=*D. appendiculata* (Griseb.) O.E. Schulz, *D. argentina* O.E. Schulz), common across the province (sometimes weedy) and *Exhalimolobos weddellii* (E. Fourn.) Al-Shehbaz & C.D. Bailey, found only in the north of the province. The genera *Lepidium* is represented by ten native species, six rare in the province: *L. boelckeanum* Prina, *L. gracile* (Chodat & Hassl.) Boelcke, *L. parodii* Thell., *L. pedersenii* Al-Shehbaz, *L. rhytidocarpum* (Hook.) Al-Shehbaz y *L. stuckertianum* (Thell.) Boelcke. The remaining four species are more widespread and generally behave as winter weeds: *L. auriculatum* Regel & Körn., *L. bonariense* L., *L. didymum* L. (=*Coronopus didymus* (L.) Sm.) and *L. spicatum* Desv. Finally, *Rorippa* is represented by two species, *R. bonariensis* (Poir.) Macloskie, widely distributed and *R. hilariana* (Walp.) Cabrera, found only in the north and center of the province.

A45
COMPARISON AMONG MULTIVARIATE ANALYSES FOR ASSESSING MOLECULAR VARIATION OF BANANA CLONES

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Edible banana has asexual reproduction so evaluating the components of genetic variation, which is needed for breeding strategies, is better achieved by molecular characterization. AFLP is an appropriate molecular technique and multivariate analyses are crucial to assess the big data generated. The objective was to compare 3 multivariate analyses (cluster, principal coordinates and principal components) to assess molecular variation of 25 banana clones with complete scores for 533 polymorphic AFLP bands. Cluster separated clones in 4 groups, 3 of them with satisfactory agreement to farmer´s field and 1 with only 1 clone considered as an outlier. Principal coordinates and components separated clones in 3 groups which included that outlier. Both methods allowed to molecular characterization of clones, but principal components also identified AFLP bands greatly contributing to molecular variation. Hence, this method extracted the highest quality and quantity information from big data, as needed for breeding programs.

A46
COMPARISON OF GERMINATION RATE BETWEEN A CULTIVAR AND A POPULATION OF APOMICTIC *Paspalum notatum* Flüggé

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The south of Santa Fe province has many great lands located in areas low, with low permeability and the presence of a water table. Looking for forage species that are adapted to these conditions, we worked with *Paspalum notatum* Flügge. The objective of this investigation is to evaluate if there is any difference between the dynamics of germination for a population apomictic *P. notatum* ("blend") and cv. Boyero-FCA UNNE. The study process was performed in the Fac. Cs. Agr. U. N. R., during November 2014 and February 2015. A random system was used, with four repetitions of 50 seeds in each experimental unit. The seeds were placed in trays plastic, as recommended by the ISTA standards. The seeds were incubated for 60 days in a germination chamber under the following

conditions: 14 hours of light and 30 ° C, alternating with 10 hours of darkness and 23 ° C. The percentages of germinated seeds at 15, 30 and 60 days (germination percentage = PG) and the germination rate (TG = number / day) were recorded. An analysis of variance (ANOVA) was performed, comparing averages Tukey test ($p < 0.05$). Higher PG were recorded in the group "blend" (36%, 46% and 80%, at 15, 30 and 60 days, respectively), while cv Boyero showed values (18%, 38% and 54% to 15, 30 and 60 days, respectively). The PG at day 60, in the samples selected for testing, exceeded the values in comparison to the 30 days (period considered in the ISTA standards for assessing the species), this result suggests the presence of seed dormancy and the need to consider change the time allotted by the standards. Both groups of seeds germinate of staggered manner, "blend" show the highest germination rate.

A47
EFFECTS OF DIFFERENT CANOPY STRUCTURE AND SEED PER POD ON SOYBEAN SEED YIELD

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Soybean seed yield (SY) is function of seed number per unit area (SN) and seed size (SZ). SN is determined by pod number per unit area (PN) and seed per pod (SPP). SN was associated with crop growth rate (CGR) between flowering and beginning seed growth, but this association did not hold in all field situations. Canopy structure (CS) affects intercepted radiations (IR) as well as the balance among photomorphogenic light wavelength. CS can be modified by plant densities (PD) and/or by plant leaflet shape (e.g. ovate, O, or lanceolate, L). L shows 20-25 % less leaf area than O. Also, L is genetically linked to higher SPP than O. During 2014/15 growing season a field experiment was conducted to evaluate changes in CS on SN and SY. Two pair of O and L soybean isolines (FV9-O/FV9-L and FV15-O/FV15-L were sown in low and high PD. SY was associated with SN (R^2=0.75) but not with SZ. SN was related with PN (R^2=0,81). Highly open CS induces an increase in PN. For similar PN, SN was always higher in L than in O isolines, because the higher SPP of the former. CGR was not associated with PN, SN or SY. There were interactions among leaflet shape and PD for PN, SN and SY. The highest SY were obtained for L genotypes in low PD, because of the increase in PN associated to open canopies added to the increase in SPP associated to L. This study shows that SY in soybean can be modified by changes in CS and SPP. The results also uphold the hypothesis of a photomorphogenic component in the regulation of PN in soybean canopies.

A48
ESTIMATION OF GENETIC VARIANCE COMPONENTS IN A SECOND CYCLE HYBRID OF TOMATO (*Solanum lycopersicum)*

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Due to significance of tomato in the world market, it is important to improve traits related to fruit quality, such as colour, taste and firmness. Second cycle hybrids (SCH) are obtained by crossing recombinant inbreed lines which are generated by breeding program, so they represent a new source of genetic variability. In selfed crops, both progenitor F_2-offspring F_3 regression method (POR) and analysis of variance (ANOVA) make estimation in different proportion of additive variance (AV) and no-additive variance (NAV). The goal of this research was to estimate AV and NAV by calculating heritability in segregants generations of SCH using two different methods for six quantitative traits: soluble solids (SS), titratable acidity (TA), pH, firmness (F), colour (L) and absorbance index (a/b). The population tested was composed by 18 families F_3derived from the SCH (ToUNR18xToUNR1). The results for ANOVA and POR respective were for: pH:0.25±0.01 and 0.11±0.06, TA: 0.55±0.01 and 0.15±0.08, SS: 0.39±0.01, L: 0.32±0.01, a/b: 0.49±0.01 and F: 0.47±0.01. SS, L, a/b and F were no significative for POR. It is concluded that the estimated AV component is the same in both methods, but POR estimated proportionally lower contribution NAV component that ANOVA. In conclusion, in this population, the major component was NAV for all quality traits analyzed.

A49
FORAGE PRODUCTION OF *Lolium multiflorum* LAM. AND *Hordeum vulgare* L. IN THE UNDULATING PAMPAS REGION, SOUTH OF SANTA FE, ARGENTINA

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The objective of this study was to evaluate the production of Dry Matter (DM) and the tillering dynamics in ryegrass *(Lolium multiflorum* Lam., RG) and barley (*Hordeum vulgare* L.; Cb) in the area of influence of the University of Agricultural Sciences, in southern Santa Fe. The study has been carried out since 2013 until 2015, in the experimental field "J. F. Villarino", Zavalla. The sowing was carried out in April and the first days of May, with the method of no-till farming (direct drilling) (1-05-13; 15-04-14 y 15-5-15), with 250 viable seeds per m2. The tiller density and DM accumulation were evaluated. Barley received two cuts during the growing cycle, while annual ryegrass received three cuts in each year of evaluation. In each growing cycle, precipitations and temperatures were registered. The production data of DM were subjected variance analysis for each species and year. The results indicated significant differences in the number of tillers among species (1525 in Barley and 2116 in Ryegrass) and among the years (1362, 2049 and 2050 in 2014, 2013 y 2015, respectively). Among the factors that condition the number of tillers, precipitations and minimum temperatures had a profound impact. There was year*species interaction in the production of DM: the greatest amount of production was detected in 2014 in both species, and in 2015 only in Barley. In the case of Ryegrass, forage accumulation was directly related to the respective total density of the tillers. Such relation was not present in the case of Barley, probably due to the compensation between size and density of the tillers registered by this study. The variation of the aerial biomass production and the number of tillers in both species allows us to decide their most appropriate incorporation in the farming system of the area.

A50
INFLUENCE OF NITROGEN IN THE YIELD AND QUALITY OF *CORN*

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The main objective in this experiment was to study the effect of different doses of nitrogen and sulfur on the yield and quality of two corn genotypes. The trial was conducted on College of Agricultural Sciences, National University of Rosario, located in Zavalla, Province of Santa Fe, Argentina, at 60º 53' W, 33º 01' S in 2012. The hybrids sown were: ACA 2000, which has vitreous texture, and ACA 417 RR2, with soft texture. The treatments consisted in two rates of nitrogen (0 kg N ha^{-1} and 150 kg N ha^{-1}), and two rates of sulfur (0 kg S ha^{-1} and 40 kg S ha^{-1}). The experiment was set out as a randomized complete block design with 3 replicates per hybrid. Experimental plots (72,80 m2) were sown at a rate of 70.000 seeds per hectare.5 m2 were harvested from each replicate and the samples were used to analyze grain yield at 14% humidity (YIELD),weight of 1000 grain (WG1000), grain weight by hectoliters (WH), protein content (PROT %) and flotation index (FI). The variables YIELD and WG1000results were tested with ANOVA and the means were compared using Fisher's test. The WH, PROT % and FI results were analyzed with the Friedman test. The correlation among these variables were measured using Pearson's test. Both hybrids significantly increased YIELD and WG1000 with N input and showed no significant differences in the variables studied for the interaction of S and the N*S. The soft texture hybrid showed positive and significant correlate between WG1000 and YIELD. The vitreous texture hybrid significantly increased the protein content with N input, but it did not decreased significantly the FI, which did not show change in endosperm texture.

A51
SOYBEAN SEEDS GERMINATION: THE ROLE OF STORED mRNA

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Seed development is controlled by specific molecular programs and both, in physiological mature seeds (PM) and in dry mature seeds (DM), a great quantity of mRNA is kept stored. In *Arabidopsis thaliana*, mRNAs stored in the dry mature seeds are sufficient for germination. We have demonstrated that the mRNA of an Expansin (EXP) is present among the stored transcripts on the embryo axis of soybean seeds (*Glycine max* L Merr.), and its level increases during germination. This EXP cause loosening and extension of cell walls in response to the cell water uptake. The objective of this work was to determine if soybean seeds germinate in the absence of mRNA *de novo* synthesis, and to study the kinetics of germination. Soybean Embryo Axis of PM and DM were incubated on either Distilled Water (DW), 100 µM of α-Amanitin (α-Am, transcriptional inhibitor) or 100 µM of Cicloheximide (Cx, translational inhibitor). Germination percentages (%G) and times to 50 %G (tG50) were calculated. On DM, Accumulated Relative Weight to the initial

weight (ARW) was measured during incubation on DW and on α-Am. On DW, the 100 %G was reached at 12 and 18 h in PM and DM, respectively; on α-Am, at 29 h in PM, whereas in DM it was only 87.5 %G at 48 h. On Cx, there was no germination in any case. The tG50 in PM were 6 and 25.5 h and, in DM, 9 and 33 h on DW and α-Am, respectively. The ARW on DW and on α-Am showed a similar increase during the first 2 h (ARW=1.8); kept stable until 8 and 12 h on DW and on α-Am, respectively and finally, it increased faster on DW (ARW=7 at 72 h) than on α-Am (ARW=2.6 at 72 h). These results showed that translation but not transcription is needed to germinate. However, there was a delay in transcription absence which was higher for DM than for PM axis. The dehydration process could modify the quantity or quality, or both, of the stored mRNAs. We postulate that the mRNA level of the EXP would be sufficient to germinate, and its *de novo* synthesis would be required to keep normal germination rates.

A52
STUDY OF SEVERAL AGRONOMIC PRACTICES IN MAIZE CROP (*Zea mays*), WHICH AFFECT SANITARY QUALITY OF THE KERNEL CORN USED FOR PORCINE DIET DUE TO MYCOTOXINS

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The aim of this research was to evaluate several agronomic practices (PM), used by some producers from the South of the Province of Santa Fe. These PM were associated with mycotoxins contamination of the kernel corn destined to porcine diet. The samples were taken from small pork producers, who they are from the town of Bigand (33º23'S, 61º11'O) and Máximo Paz (33º29'S, 60º57'O). These fields were subjected to different PM such as: planting time (FS), genotype (G), nitrogen fertilization (FN) and plant density (DS). Seven situations were analyzed. Seed subsample was extracted and evaluated. Desoxivalenol (DON), zearalenona (ZEA) and aflatoxins (AFLA) presence was defined using ELISA. FS 04/01 of G Dekalb 692 match between both DS and FN with G ACA 596 of 15/12, however, it was the first one which presented higher levels of ZEA (1,388 vs 0,028 ppm, respectively). DON was, in all cases, above the tolerance levels admitted in the rations (0,25 ppm). Even so, G Dekalb 747 vt triple pro registered significant differences according to the environment that was somitted. FS 12/11 showed the highest values (2,2 ppm), duplicated the one on 04/12 (1,1 ppm). AFLA, in all cases, we found less levels than the minimum admitted in the rations (0,02 ppm). ZEA appearance is connected to seasonal variations of temperature (summer-autumn), which appeared on 4/01(FS) during crop's maturity stage. This explains the results. Genotypes present different susceptibility to micotoxins, which are shown in the interaction: productive environment and virulent pathogen. The low AFLA is related to the fact that the pathogen produce of mycotoxin, *A. flavus*, is associated to storage.

A53
TEGUMENT MECHANICAL CONTROL ON IMMATURE SOYBEAN SEEDS GERMINATION

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Developing soybean seeds (*Glycine max* (L.) Merr.) do not exhibit viviparity, although they can be induced to germinate on adequate *in vitro* conditions after histological differentiation is completed, i.e., nearly 21 days after anthesis (DAA). However, germination rates are lower than in dry mature seeds, thus indicating the existence of germination restrictions. The main control is the embryo axis ABA level. Moreover, from 25 DAA, both embryos (seeds without tegument) and isolated embryo axis (neither tegument nor cotyledons) have similar germination rates which are higher than in whole seeds. This shows a tegument restriction on precocious germination. The tegument could be a physical barrier on the mycropilar area where the embryo axis protrusion occurs. The objective of this work was to measure the tegument resistance on the mycropilar area, and to determine the tegument resistance evolution during seed development. One hundred teguments per age were evaluated, on 25, 30, 35, 40 and 45 DAA. The resistance was measured using a TA XT Plus Texture Analyzer. The results were analyzed by ANAVA and LSD test ($p<0.05$). The pressure needed to protrude the tegument increased through the seed development: there were no differences between 25 and 30 DAA (1.27 and 1.30 MPa, respectively) nor between 40 and 45 DAA (1.62 and 1.63 MPa, respectively), but 35 DAA (1.38 MPa) was significantly different from both. From 25 to 45 DAA, with a high water content (≥58%), the mechanical resistance of tegument on the mycropilar area was increased, while the embryo axis ABA level dropped. These results support the hypothesis that, before the beginning of the rapid seed dehydration, the mechanical resistance of tegument to the radicular protrusion would contribute to the control of precocious germination by avoiding the viviparity, still when the embryo axis ABA level is lower than the inhibition threshold.

A54
WEIGHT GAIN AND BACKFAT THICKNESS OF PIGS IN SYSTEM "DEEP BED" AND OUTDOOR

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The objective was to evaluate the productive performance of pigs from 30 kg to 130 kg live weight housed in two distinct environments: a system of "deep bed" (CP) and outdoor (AL). During the period from July to September 2015, about fifty-six castrated males (M) and females without service (H) CP = 17 M and 11 M and AL = 17 M and 11 M, the daily liveweight gain was calculated (daily gain = Pfinal - Pinitial / day) and backfat thickness (EGD, mm) was measured at the level of the last rib (P2 point) using the technique of ultrasound when animals reached 90 kg liveweight. Data were analyzed with an ANOVA to test ($p < 0.05$).Data were analyzed with an ANOVA to test ($p < 0.05$). System within the results showed no significant differences between sexes, while M had higher weight gains. Both the M and H had better weight gains in the CP system ($p < 0.03$). Within the same sex no significant differences in GDP both H and M. significant differences between MCP vs HAL ($p < 0.05$) was observed. Regarding the EGD system variable within no significant differences were found in any case. Only observed $p < 0.03$ for EGD variable in the case of HCP that showed higher values compared to the HAL. The conclusion is that the H and M have different response depending on the management system implemented. These results should be taken into account when implementing management strategies to animals for experimental conditions of work.

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A55
ANTIOXIDANT CAPACITY OF AQUOUS EXTRACTS FROM *Lippia alba* AND *Vigna luteola*

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Voltammetric techniques (intensity/potential curves) are widely used in determining the electroactive characteristics of vegetal materials and therefore, they are good tools to study in general the potential forage plants as reducing power sources (antioxidants). In this work, results obtained with aqueous extracts are presented (1:3; p/v) of *Lippia alba* (L) and *Vigna luteola* (V), two vegetable species typical of wetlands of Lower Parana River (Parana Delta) that shows differences at dry matter level (29.4 and 23.5%) and in the fast degradable fraction in rumen (15.6 and 34.5%) respectively. Potentiometric measurements and differential pulse voltammetry (DPV) sweeps were performed on aqueous solutions containing 40 mM KCl and 2 mM HCl, which were supplemented with vegetable extracts of L and V (1/1; v/v). DPV sweeps were performed between +2.0 and -2.0 V, with a step and pulse amplitude of 10 mV and duration of 0.4 and 0.04s, respectively. All potential values are given *vs* the calomel electrode. Eh'_7 value (apparent redox potential at pH = 7) in the control aqueous solution was 0.207 V and after the L and V extract supplementation it was of 0.058 and 0.041 V respectively ($p<0.01$), which indicates that both extracts similarly increased the quantity of redox compounds with low potentials compared to the reference electrode (calomel).The concentration of electroactive compounds in the wide range of the potentials studied was lower ($p<0.05$) in the V and L supplemented solutions (52 and 66% respectively). Nevertheless, the oxidative status ($OS = \Sigma Eh'. [\text{oxidizing species}]$)[1] in the control, was + 157 while in the L and V was -29 ($p<0.01$), which indicates that the systems with low concentrations of electroactive compounds have a higher potentiality as donors of e-. This result coincides with the lowest Eh'_7 values observed, and with the cumulative curves of electroactive compound concentration, which show a significant decrease in high potentials compared to controls (presumably associated with the O_2 dissolved in the aqueous system). The study shows that the technique employed provides important information for understanding the physicochemical and biological mechanisms that generate the redox state of various natural aqueous systems (the ruminal environment for example).

A56
EVALUATION OF TWO REPRODUCTIVE INDICATORS IN DAIRY GRAZING SYSTEMS IN SANTA FE – ARGENTINA.

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During the last decades, the semen used by Argentinian farmers has been imported from North America, and the main breeding objective has been individual high milk production, which is negatively correlated with functional and reproductive traits. The aim of this work was to study the behaviour of calving to conception interval (CCI) and number of services per conception (NS) in five dairy farms in the Santa Fe state, Argentina. 14022 calvings from year 1990 to year 2013 of Holstein Friesian cows were analyzed. Multi-factor ANOVA was used for the statistical analyses. The factors were year of calving, farm, production level (high, medium or low), season of calving, and number of calving. Results show that all factors had significant effect ($p \leq 0,05$) over the CCI and NS. In both cases, production level explained most of the variability. Both CCI and NS means were larger for high producing cows (CCI means in days: 189,53 for high; 124,49 for medium; 87,92 for low. NS means in days: 3,98 for high; 2,56 for medium; 1,88 for low). Results concur with the studied bibliography, which asserts emphasizing on individual high milk production may lead to a diminished reproductive performance. It may be concluded that the studied farms had a poor reproductive performance, and the reproductive parameters were even worse in cows with a high individual milk production.

A57
EVOLVING STATE OF HYDATID CYST IN CATTLE

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The hydatid cyst (QH) is the larval form of *Echinococcus granulosus* or metacestode. Cattle involved in the parasite cycle act as an intermediate host (HI) where the QH develops. The evolution of the metacestode into a QH depends on different HI factors such as genetic, immunological, physiological and nutritional status; as well as on intrinsic factors of the parasite. To determine the different developmental stages of *E granulosus* metacestodes, 92 QH from 20 bovines were analyzed. Anato-pathological observations and histological studies were performed. Samples were fixed in formalin 10%, embedded in paraffin, cut at 5 microns and stained with hematoxylin and eosin. Examined organs were lung, liver and heart. Metacestodes were classified into four categories: hyaline, caseous, calcified and abscessed. According to this classification, hyaline was the most frequent (79.3%, 73/92), followed by abscessed (12%, 11/92), calcified (6.5%, 6/92) and calcified (2.2%, 2/92). Animals with QH at different developmental stages were observed. The high percentage of hyaline QH could indicate a recent infection; however, it should be taken into consideration the slow evolution of this larval stage as well as the animal age at harvest. The presence of different QH developmental stages in the same animal could be explained by considering that the ingestion of parasite eggs happened more than once. This would allow inferring that animals are in high risk epizootic area.

A58
IDENTIFICATION OF HEMOTROPHIC MYCOPLASMA SPECIES IN DOGS

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Hemotrophic mycoplasmas (HM) are epicellular parasites of different mammal erythrocyte surface; hemolytic anemia can occur in infected animals. To date, none *in vitro* cultivation systems have been available resulting in little information about pathogenesis of HM infection. Polimerase chain reaction (PCR) have improved HM diagnosis but it is still uncertain how HM evade immune system to persist in the organism or their zoonotic potential. Two species of dog HM were described: *Mycoplasma haemocanis* (MHC) and *Candidatus* Mycoplasma haematoparvum (MHP). Recently it was comunicated the frecuent observation of HM compatible structures in healthly dog blood of Rosario; then the presence of HM was confirmed by PCR. The aim of this work was identify MH species in dog populations. Blood with EDTA of dogs of Santa Fe and Córdoba were taken and storaged at a -20°C until DNA extraction. Specific regions of HM group and HM species DNA were amplified with PCR. Fifty two of 71 dogs were infected; identification of HM species was made in 19 of these positive samples: in 13 the HM specie was MHC and in 6 was MHP, so MHC was presented in 68% of the studied positive dogs. In one population (kennel dogs of Isla Verde) identification was completed and MHC was presented in 75% of the

animals. It is estimated that MHC will predominate in the rest of the populations. Some differences between HM dog species can be exist, as happened between feline MH (different virulence) and *Mycoplasma suis* strains (different antibiotic sensibity). Identification of HM species would help to understand MH epidemiology and to make associations between MHC and MHP and variables as biological characteristics, type of pathologies and ectoparasites infestation of investigated dogs.

A59
POLYPHENOLS APPLICATION IN THE DIET OF LAYING HENS AND ITS ECONOMIC BENEFIT

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In poultry farms, fly control is an inherent and transcendental activity within all those related to breeding complying with important health and economic objectives. As an alternative to Integrated Pest Management (IPM), in this work polyphenols of red quebracho (Schinopsis lorentzii) were incorporated in the diet of laying hens in order to assess the impact on the population of flies in laying hen barns and to determine if they are economically viable. In a 14-month period (2013-2014), two barns were under study: "A" (Treated Group) and "B" (Control Group). Both of them were 4 x 100 meters with 5,000 24-weeks old Hy-line laying hens (colour) and had identical environmental and management conditions. The two groups were fed laying hen balanced diet, except for group A which was added polyphenols extracted from the red quebracho tree cortex (*Schinopsis lorentzii*) with 70.9% soluble tannin added at 1,000 g/tn of feed. Group A consumed 200kg polyphenols a year supplemented with 4 L DDVP as insecticide during the summer months. Group B took 365 hs workforce a year to remove guano; during the three summer months, 500 g/T Cyromazina balanced food were administered; 4 L of DDVP and 4,000 kg quicklime powder were used over the guano. The density of fly larvae in guano was used as a response variable. Ten monthly samples were collected from each barn for 14 consecutive months in a standard unit of a grid=0.20 m^2 and thrown in zigzag every 10mts under each cage row and collected at 5cm depth in both barns . The values for this variable according to the number of larvae per grid were classified into: High (> 50 larvae), Moderate (between 10 and 50 larvae) and Low o null (< 10 larvae). Over 140 samples, Group A had 7, 16 and 117 larvae respectively, while Group B had 18, 24 and 98 larvae over the same quantity of samples. The statistic test $\chi 2 = 8.12$ ($p < 0.05$) so it was decided to reject the null hypothesis at a level of significance of 5%. The direct annual cost for Group A was $9,828 (200kg polyphenols at $45 the kg and 4 L DDVP at $207 the L). Groupo B reached an annual cost of $31,843 (45 kg Cyromazina at $17, 4 L DDVP at $207 the L, 4.000 kg quicklime at $ 3 the kg and 365 hours at $50). The difference between treatments shows a favorable result for the treated group of $22,015 a year. The decrease of guano larvae in Group A compared with Group B, rests on the substrate modifications, making it unsuitable for larval growth and feeding. The addition of polyphenols to laying hen feed would allow for an integral control of flies affecting the vector cycle in its most important stage: the larval stage. The difference in costs suggests that treatment represents a technical and economical viable alternative and contributes to the aim of achieving a higher IPM efficiency, showing a positive impact on the economic, social and environmental sustainability.

A60
PREVALENCE OF CONGENITAL DISEASES, CLINICALLY DIAGNOSABLE, IN THE GERMAN SHEPHERD BREED

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Congenital diseases in the German Shepherd, as in any canine breed, are those that occur in puppies at birth and are basically due to genetic factors, infectious or nutritional deficiencies that the mother may have undergone during gestation. Among the clinically diagnosable congenital diseases, gastroschisis, cleft palate, intersex, megaoesophagus and anasarca can be mentioned. A study on 209 parturitions in *Canis lupus familiaris* of the German Shepherd breed raised between 1 January 2014 and 30 June 2015 was carried out with the aim of determining the prevalence of clinically diagnosable congenital diseases. In all cases the bitches studied, fed with 1st quality balanced feed (30% pure raw protein and metabolizable energy of 3750 Kcal/kg DM) 600 gr daily administered in two meals. The bitches were dewormed after the stool testing at the onset of estrus and 50 days after gestation. No medication was administered during pregnancy. All bitches were under a complete vaccination schedule implemented 30 days before estrus. In all cases, ultrasonographies were performed on days 28, 45 and 59 -on day 28 to diagnose pregnancy; on day 45, to assess pregnancy progress and on day 59 to diagnose fetal stress. Difficult births were surgically solved considering the breed multiparity and the high percentage of medical dystocia treatment failure. Of all labors, 86.6% were normal and 13.4% were dystocic. Out of 1396 puppies born (average 6.7 puppies per litter), 1173 were live and viable (84%), 202 (14.4%) were stillborn or died within 24hs after birth and 21 (1.5%) were born with clinically detectable defects among which 5 low weight at birth (23% the total diagnosed defects), 4 (19%) gastroschisis, 4 (19%) thoracoschisis, 3 (14.2%) anasarca, 1 (4.7%) limb alterations, 1 (4.7%) cleft palate, 2 (9.4%) megaoesophagus, 1 (4.7%) intersex. The prevalence of clinically diagnosable congenital diseases is 1.5% in the studied population. This breed showed clinically diagnosable birth defects significantly below the 2.6% reported for the canine species.

A61

RESPONSE TO *Trichinella spiralis* USING AN INTRADERMAL REACTION TEST IN c57 BLACK MICE

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The test for skin delayed hypersensitivity, has been well studied as intradermal reaction test for diagnosis of Trichinellosis in endemic areas. The aim of this study was to analyze the reaction produced by a antigen of T. spiralis inoculated intradermally into mice of the strain C57 Black. To assess the test response; 0.1 ml of the antigen suspensión and 0,1 ml of saline solution were inoculated to 19 C57 Black healthy and infected mice of 100 days. The test was performed on the right rib cage and observations were made at different times post injection. Each inoculated área was measured and underwent an histopathologycal study. 1: Average (10 ± 0) mm x (5.0) mm, skin thickness 4 ± 0 mm at 24 h and (5.5 ± 0.5) mm x (5 ± 0) mm and 3 ± 0 mm at 48 h with a marked inflammatory response (IR) with abundant polymorphonuclear neutrophils (PMN); 2: Average (5 ± 0) mm x (5 ± 0) ± 0 mm and 3 mm at 24 h and (4.25 ± 0.70) x (3.75 mm ± 0 70) 2.5 ± 0.5 mm at 48 h; 3 4 x 4 mm and 2 mm at 24 h, and 3 x 2 mm after 48 h and 2 mm In the groups 2 and 3, the IR and PMN were moderate.; 5 Average of 3 x 3 mm and 1 ± 0 mm 24 and (1 ± 1) mm x (1 ± 1) mm at 48 h and (1 ± 0.8) mm This group showed a low IR with few PMN; 4 and 6 did not show any reaction with a skin thickness of 0.05 mm and absence of IR and PMN. These results shows a marked difference between infected and healthy inoculated animals. Histological findings also shows a qualitative characterization of immune responses, consistent with data obtained in measurements. It can be concluded that this technique, after testing in other susceptible species, could be used for the diagnosis of Trichinellosis *in vivo* in pigs from 15 days of infection, considering that the reaction is much earlier than detected by serological methods.

A62

RISK OF ANIMAL BITES IN CHILDREN FROM ROSARIO, SANTA FE, DURING 2012

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Animal bites are considered a growing public health problem. We conducted a retrospective cohort study based on information obtained from the rabies-prevention office at Carrasco Hospital during 2012, using percentages and confidence intervals 95% (CI 95%) or the main and its standard deviation (SD) as appropriate. The aim of the study was to calculate the risk of accidental bites in children less than 5 years of age, and between 5 and 14 years old, and assess the relative risk of children from the West District (WD) in relation to children at the Center District (CD), which was taken as reference. The study was based on 327 animal bites recorded in children who were less than 15 years. Dogs caused 97.2% (CI 95%: 94.6 - 98.6%) of the accidents. Children aged up to 5 years (0-4) accounted for 43.1% (CI 95% 37.7 to 48.7%) with a mean age (mean ± DS, years): 2.3 ± 0.09, while those who were between 5 to 14 years (5-14) were 56.9% (CI 95% 51.3 - 62.3%) with a mean age (mean ± DS; years): 8.8 ± 0.22. In the year studied, the risks (accidents / 1,000 inhabitants) were: (0-4) = 2.11; (5-14) = 1.19; $RR_{(0\text{-}4\ /\ 5\text{-}14)}$ = 1.76 (CI 95%: 1.42 - 2.19). We found that in the WD, RR was significantly higher than in the CD, taken as reference, $RR_{(WD\ /\ CD)}$ = 3.33 (CI 95% 2.24 - 4.95). However, for children up to five years old (0-4), there was no significant difference between CD and WD: $RR_{(WD\ /\ CD)}$ = 1.54 (CI 95%: 0.90 to 2.63). Nevertheless, a significant difference was found among (5 - 14) in both districts: $RR_{(WD\ /\ CD)}$ = 4.33 (CI 95%: 2. 33- 8. 06). The analysis contemplating districts show that the greater vulnerability of the WD is at the expense of older children, who are between 5 and 14 years old. Based on the conducted analysis, we can conclude that there exist a need to deepen these studies in order to implement preventive measures dependent upon individual districts, at least in terms of age groups.

A63

RUMINAL DEGRADATION AND CHEMICAL COMPOSITION OF FORAGES GROWN IN CASILDA, SANTA FE, ARGENTINA

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The aim of this work was to study the relationship between the parameters that describe the kinetics of dry matter ruminal degradation *in sacco* (DMRD) with Organic Matter, Non Structural Carbohydrates, Crude Protein, Lignin, Acid and Neutral Detergent Fiber in forages from vegetable species grown in Casilda, Santa Fe. Argentina. The forage samples employed were **crop stubble**: straw wheat, corn, sorghum and soybeans stover; **forage hay**: moha rolls, festuca and alfalfa (1) and alfalfa bales (2, 3, 4, 5, 6 and 7) and **prairies**: oats, bromus, mellilotus, white clover and alfalfa dried at 60°C, ground and sieved with a 2 mm sieve. ASTM 230 nylon bags (pore size: 62 micron) were incubated with 3gr DM (17mgDM/cm^2) of each sample during 0, 2, 4, 8, 12, 18, 24 and 48 h for all samples and, at 72 and

96h, they were added to crop stubble in the rumen of two sheep with ruminal cannula and fed alfalfa hay for three periods. Besides, the chemical composition, organic matter (OM), non structural carbohydrates (NSC), crude protein (CP: N x 6.25), lignin, Acid Detergent Fiber (ADF) and Neutral Detergent Fiber (NDF) were measured. Results showed that there is an inverse relation between the soluble fraction and the rumimal degradation speed, especially with the ADF and NDF concentration in the forage samples. The degradable fraction in rumen, although it did not show such close relations, showed an inverse behavior with regards the other estimators, for all the chemical parameters measured in forages. Crude protein and NSC increased with the soluble fraction and the ruminal degradation speed. High levels of ADF and NDF could account for the low solubility and ruminal degradation speed, and high percentages of CP and NSC, the high solubility of forage samples.

A64
SEROLOGIC DETECTION OF *Leptospira interrogans* INFECTION IN BOVINES AND EQUINES FROM TWO REGIONS OF ARGENTINA

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Leptospirosis is an endemic infectious disease in Argentina. It affects bovines and equines, causing economic losses due to agalactia, abortions and high perinatal mortality. The most frequently detected serovars are Pomona and Hardjo. The aim of this work was to determine the rate of seropositivity to *L. interrogans* and to different serovars in two bovine populations and one equine population from different regions. Serologic analysis was performed with the Microscopic Agglutination test (MAT) on 48 bovines and 27 equines from the south of Santa Fe province and 166 bovines from the southeast of La Rioja province. From the 48 bovines analysed, 17 (35.41%) were seropositive. Out of these, 12 (70.58 %) showed co-agglutinations between different serovars. In the remaining 5 (20.41%), 3 were positive to Pomona with titers from 1:400 to 1:800 and 2 had positive sera 1:200 to Wolffi. In La Rioja population, 9 (5.42%) animals were positive to MAT, out of which 4 showed co-agglutinations -in one of these, a 1:1600 titer to Pyrogene was detected. Besides, two sera agglutinated only to Pyrogens, 2 to Pomona and 1 to Hardjo with 1:100 titers. With regards equine sera, 15 (55.55%) were positive, out of which 7 showed co-agglutinations. Of the remaining equines, 6 were 1:100-1:200 positive to Pomona and 2 to Icterohaemorrhagiae with a titer of 1:100. The results lead to conclude that in the southeast of La Rioja, infection with *L. interrogans* exists and that in Argentina, Pomona is still detected with a high frequency. These findings coincide with previous reports published in the country for these studied species.

A65
STUDY OF THE MOST FREQUENT TESTICULAR NEOPLASMS IN 2014

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Testicular neoplasms are the second most frequent neoplasms in dogs following the integumentary ones in rates between 0.7 – 4.6% (Peters, and col. 2001). Histologically, testicular neoplasms in dogs can be classified into: Sertoli cell tumors (SCT), seminomas, and intersticial or Leydig's cell tumors (ICT). These may manifest individually or simultaneously together in one testicle, although the latter is rare as the neoplasms originate in different cell lines (Masserdotti, C. 2000). The aim of this work was to study the frequency of each testicular neoplasm in dogs diagnosed with neoplasms at the Veterinary Histopathology Laboratory of Rosario during 2014. A retrospective observational study was carried out with data of cases analyzed between 1st of January 2014 and 1st January 2015. 952 samples corresponding to biopsy results sent to the laboratory and taken during surgeries on male dogs of different breeds and ages were studied. In all cases, tissues were processed in agreement with the traditional histological technique of paraffin-embedding, cut and Hematoxylin and eosin stain. Each tumor was classified according to their histogenesis into germinal, Leydig cell and Sertoli cell tumors. When more than one type of tumor in one animal was detected, the case was studied separately. Out of the 952 samples, 68 (7.1%) resulted in testicular neoplasms of which 31 (45.5%) were seminoma germinal tumors, 23 (34%) intersticial Leydi cell tumors and 14 (20.5%) Sertoli cell tumors. The highest frequency of testicular neoplasms was detected to be seminomas, followed by intersticial Leydi cell tumors and Sertoli cell tumors. The age in which these neoplasms were diagnosed varied between 6 and 14 years, while no breed predominance could be detected.

A66
TEMPERATURE EFFECT ON MILK PRODUCTION OF NEW ZEALANDER DOES

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This work is an experience of milk production and food conversion on rabbits carried out at the Rabbit Production Module of the Faculty of Veterinary Sciences, U.N.R., by the Poultry and Piliferous Production Chair. The aim was to comparatively describe and analyze seasonal effect on primiparous rabbits. Measurements were performed in May and June (autumn) and September, October and November (spring) during the first 18 days of lactation. Efficacy in milk ($CV_{AB/PL}$) and meat ($CV_{AB/PFC}$) transformation were determined as measurements of feed conversion. A 17 m x 7 m shed, east-west oriented, with natural ventilation, lateral curtains, flat tin roof and cement floor was employed. The cages of 0.45 m. x 0.90 m. x 0.30 m are versatile, arranged on one floor, built in galvanized rod, and equipped with water dispensers and feed troughs. Fifteen individual cages were used in autumn and 27 in spring. Primiparous New Zealand White does were studied. The reproduction system followed was semi-intensive (mating at 11 days from kindling) and rotation of cages. Does were fed recognized commercial feed, pelleted, 3 mm in diameter; 17% raw protein (RP); 13% raw fiber (RF); 3% raw fat (RF); 2700 kcal / kg *ad libitum* throughout the study. Milk production was obtained with the difference between weight before and immediately after lactation. Weights were taken with a digital 1.0g precision scale at intervals of 8-10hs daily. Records were started on the second day after kindling. Environmental temperature was simultaneously recorded in C degrees throughout the period of observation. In the autumn period the average temperature was 13.8°C, with a standard deviation of 3.4°C with a minimum of 6.8ºC and a maximum of 19.6ºC. For the spring period, the average was 26°C, with a standard deviation of 3.8°C, 20ºC minimum and 33ºC maximum. Mean daily milk production was 179 g to 202g in autumn and 155 g to 167 g in spring. In relation to the "feed conversion" variable, two indicators were considered: $CV_{AB/PL}$ = grams of Balanced Feed consumed/grams of milk produced, and $CV_{AB/PFC}$= grams of Balanced Feed consumed/Final Litter Weight (g) on day 18. In autumn, the average $CV_{AB/PL}$ was estimated in 1.24 - 1.74, and 0.93 - 1.35 in spring. $CV_{AB/PFC}$ was estimated in 1.92 - 2.64 in autumn, and 1.52 - 1.91 in spring. All estimates were performed with a confidence level of 95%. Significant differences were observed in the mean values of Feed Conversion with both indicators at a significance level of 0.05. As it can be observed, milk production decreased with high temperatures, probably due to the decrease in balanced feed consumption as a consequence of the environmental heat. On the contrary, a better feed conversion is observed in higher temperatures which might be attributed to a lower exposition to energy exhaustion from milking the litter. It is important to act on the undesirable effects of heat in sheds (materials, orientation, ventilation, refrigeration, density, etc) and favor energetic concentration and nutrient quality of feed.

A67
TESTICULAR MORPHOMETRY AND SEMEN QUALITY OF CHINCHILLAS (*Chinchilla lanigera*) MAINTAINED IN CONTROLLED ENVIRONMENT

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According to the literature, males chinchilla with natural lighting show photoperiodic changes in serum testosterone levels and morphometry of sexual glands, with higher values in autumn and winter. Meanwhile, the values of testicular volume and sperm quality suggest that males are able to breed throughout the year. There are no information about individuals maintained in environments with photoperiodic control. Objective: to compare the testicular and epididymal sperm morphometry and semen quality of adult male chinchilla, under two schemes of artificial lighting. The photoperiodic control consisted in a natural light replacement by electric light, with two phases of photoperiodic promotion (10-13 hs of light/day with a daily increase of 1:24 min), five months each (1/12-30/4 and 1/6-31/10) with a period of one month (May-November), with 10 hs of light. The animals were divided into four groups. At the end of April (GI) and October (GIII), both with 13:30. light/day; and at the end of June (GII) and December (GIV) to 10:30 am. light/day. Five animals/group was performed orchiectomy right and was determined: body and testicular weight, somatic organ index, testicular volumen, relative epididymal weight, sperm motility, vitality, osmotic resistance test, total sperm, morphology and acrosomal status. No differences (Kruskal-Wallis $P < 0.05$) between groups were presented, suggesting that in these conditions, males are suitable to reproduce under both lighting regimes in the two seasons, information that corroborates and complements the available for specimens kept in captivity under natural photoperiod regime.

Facultad de Odontología y otras Unidades Académicas

A68
ACTIVELY EXPLORE, A STRATEGY TO ACHIEVE BETTER PERFORMANCE IN BIOCHEMISTRY IN THE CAREER OF MEDICINE

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The objective is whether the realization of the assets held (AH) modified academic achievement in the partial 1. 68 students participated in all the AH, 4 total, and partial 1. To do variables and proportion for each defined. A) If the student received in the 4 Insufficient AH = 0.15. B) If the student obtained 3 Deficient and 1 approved in the 4 AH = 0.12. C) If the student had 2 Insufficient and 2 approved in the 4 AH = 0.13. D) If the student had 1 Insufficient and 3 Approved in the 4 AH = 0.26. E) If the student obtained in the 4 Approved AH = 0.33. Chi square test to a significance level of 5% ($p < 0.05$) applies. The results were: A) 10 students. 5 approved partial 1 (50%). B) 8 students. 2 approved partial 1 (25%). C) 9 students. 4 approved partial 1 (44%). D) 18 students. 13 approved partial 1 (72%). E) 23 students. 20 approved partial 1 (87%). Conclusion: It follows that the greater the amount of present active approved increases student achievement in the set. Therefore the commitment and responsibility to study continuously to approve AH, is productive to achieve better results in the partial evaluation.

A69
ANALYSIS OF ASSISTED POPULATION IN ENDODONTICS DEPARTMENT – UNR

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Endodontic treatment (ET) is a scheduled clinical practice. During 2015 the chances of patient care that require ET at the Faculty of Dentistry of Rosario (FDR) were multiplied, and emerges the need to plan the offer of care in order to provide a better and more organised service. Planning should be based on knowledge of the characteristics of the population through epidemiological tools in order to find variables that allows a characterization of it. OBJECTIVES: To know the population that required ET at the FDR in 2014 and their demands through a retrospective descriptive epidemiological study. METHODOLOGY: The clinical records (CR) of the assisted patients were used; a database was built, in which age, sex, place of residence, affected tooth, and diagnosis were registered using as an identifier the document number to avoid duplicate data. Once the data were registered, their consistency was verified and were entered into a spreadsheet for analysis. RESULTS: 8 CR were rejected due to errors (n = 1297). A frequency distribution of independent variables was used. Average age: 36 years. Gender distribution was: 61% F and 39% M. 82% were residents of the city of Rosario. 1642 TE were performed, the teeth most frequently treated can be grouped into: incisors and canines (49%), bicuspids (30%), Molars (21%). Diagnosis category: Symptomatic Pulpitis 38% Pulp necrosis, 36%, Asymptomatic Pulpitis 24% retreatment 2%, prosthodontics requirement 1%. CONCLUSIONS: Female sex was prevalent. The highest percentage corresponds to city inhabitants. Analysis of the most frequently affected teeth can conclude a predominance of anterior ones but to affirm this, another data should be included in the study such as missing teeth. Most pathologies were asymptomatic. Considering the variability of teeth and the different diagnoses arises the necessity to plan a system of triage of patients in order to properly direct the demand according to the different available levels of care.

A70
CHARACTERIZATION OF *Caiman latirostris* EMBRYONIC REPRODUCTIVE TRACT

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The sex of *C. latirostris* offspring is determined by the incubation temperature (temperature-dependent sex determination; TSD), and influenced by steroid hormones (HSD). Female offspring can be achieved after in ovo estrogen/xenoestrogen exposure incubated at male-producing temperature. At stages 22, 24 and 27 of embryonic development the histoarchitecture of reproductive tract of embryos obtained from eggs incubated at male or female producing temperature (MPT or FPT) or at MPT+E2 (a dose of 17□-estradiol -E2- that overrides the temperature effect was used) was established. Estrogen receptor alpha (ER□) and proliferative activity (PCNA) were assessed by immunohistochemistry. High expression of ERa was observed in the gonad and the duct, without differences between

groups. At stage 22, a stimulating effect of TºC on PCNA expression was exhibited by the duct and the undifferentiated gonads of embryos from MPT and MPT+E2 groups ($p < 0.01$); effect that was enhanced, in the duct, by the addition of E2 ($p < 0.001$). Differences in proliferative activity were not reflected by changes in ductal epithelial height. Sex differentiation gonadal histo-architecture started on stage 24; cell clusters characteristic of ovarian structure were observed in embryos from FPT and MPT+E2. At stage 27, embryos from MPT exhibited seminiferous tubules and absence of ducts. Our results show that there is no full equivalence in ovarian development in females obtained by TSD or HSD. The duct and the gonads of *C. latirostris* embryos are highly sensitive not only to the incubation temperature but to the action of E2 allowing us to study the effect of xenoestrogens on caiman reproductive tract development.

A71
COMPARISON THE DIFFERENT WAYS TO EVALUATE THE STUDENTS IN BIOCHEMISTRY IN THE CAREER OF MEDICINE IN 2015

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The objective is determine if changing the evaluative method, the performance of the students increase, comparing the 1° and 2° partial. 69 students participated in both partials, the first one was ten written questions of the theoric contents and the second was resolving clinical cases, orally, in groups of students. The results were: in the first partial, 44 students approved the exam and 25 disapproved in a total of 69 students; and, in the second partial, 49 students approved and 20 disapproved. Chi square test to a significance level of 5% ($p < 0.05$) applies. Conclusion: the results were better in the second partial. So, the change of the evaluation method was very successful and obtains a better performance when the students were evaluated orally.

A72
DENTAL FEATURES IN PATIENTS OF ROSARIO CITY: COLOUR, SIZE, ALIGNMENT, FACIAL BIOTYPE AND GINGIVAL STATE

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The calcified tooth is yellowish white, according to the size, small, medium or large, are well aligned when a correct point of contact between their proximal sides exists. The shape of the face (facial biotype) is the set of morpho- functional traits determined by the growth of the jawbone, so a long narrow face will be dolichofacial, with balance between vertical and transverse diameters, normofacial and short and wide brachyfacial. The teeth are lodged in the alveolar ridge covered with gum; that in health conditions is coral pink with a firm and resilient consistency, surrounding the cervical portion of the teeth. The aim was to analyze the dental characteristics of patients of both sexes between 15 and 45 years of private and public services in the Rosario City. A standardized anamnesis was used to inquire on color, size, alignment, facial biotype and gingival health. The total, 333 patients, in the private color was 29% yellow, yellowish-white 27%, 16% gray, 6% brownish, and white 22%, in public these was 52% white yellowish, 35% brownish and 13% white teeth ($p < 0.001$). Proper alignment in private reached 74% and 26% misaligned; well aligned in the public were 69% and non-aligned 31% ($p = 0.081$). The private had 52% of gum disease and 48% with healthy gums; in public 63% and 37% respectively ($p = 0.087$). Conclusions: In both services, most dental patients had consistent color with a good mineralized tooth a good size with correct alignment that contributes to good dental health. In private it was most normofacial gingival biotype been accompanied by wrong gingival state while in the public predominated brachyfacial and good health of the gums.

A73
EVALUATION IS PART OF THE LEARNING PROCESS: DIAGNOSTIC INSTANCES AND THEIR REPERCUSSION IN TIME

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Biochemistry is an annual subject mandatory to the second year courses of medical school, with different stages of examination throughout the course. Objective: To determine whether the academic performance of students is modified in the first midterm exam having previously conducted a diagnostic exam. Methods and materials used: a diagnostic assessment to a total of 68 students enrolled in Biochemistry in 2015 was carried out; these students started medical school in 2014. 68 students took the first midterm exam in

biochemistry; the Chi-square test was applied with a level of 5%. Results: out of 68 students 7.4% passed the diagnostic exam in May. 64.7% passed the first midterm exam and the remaining 35.3% failed. During the first midterm exam, students grades improved considerably compared to those obtained in the diagnostic exam. This quantitative information is statistically significant ($p < 0.05$). X2 Observed = 48.5. X2 Theory = 3.84 to $p < 0.05$. Conclusion: academic performance increased significantly in the first midterm exam. The motivation of the students was favorable.

A74
FISHERMEN OF THE ROSARIO COAST AND NEIGHBORING ISLANDS: DENTAL EMERGENCY RESOLUTION, INDEX DMF AND AGE AT FIRST DENTAL EXTRACTION

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The fishermen of the "coast" have dental access to care or can attending at Urban Health Center Remanso Valerio. The populations of "Charigüé" and "Wintering" should moving to the city for care. Treatments are done privately or at through social dental inclusion. Analyze the access at the dental services, dental resolution of urgency, oral disease and age of onset of tooth loss. A standardized anamnesis aimed at fishermen 15-45 years (GA: 15-29 and GB: 30-45), responding on by residence, resolution of the emergency, the DMF index and age of the first extraction. Independence test Fisher. In the "coast" 80% have no social coverage and only 20% the has with dental inclusion; at "Charigüé": 79% lack and 21% have without dentistry; "Wintering": same response in 64% and 36%, respectively ($p < 0.001$). In the "coast" the teeth are extracted in the public service; "Charigüé" in public for 63% and the remaining 37% pays its private treatment; "Wintering": works the same way 45% and 55%, respectively ($p < 0.001$). DMF index average "coast": 10.10 ±6.9, "Charigüé" 8.47±5.9, "Wintering" 8.91±5.03 ($p=0.71$). Decayed respecting residence order: 2.30±2.29, 1.58±1.61 and 1.36±1.57 ($p=0.34$); Missing: 7±6.21, 5.68±5.93 and 4.18±5.7 ($p=0.46$); Filled: 0.80±1.47, 1.21±1.84 and 3.36±3.88 ($p=0.0015$). The age at first extraction was higher in GA: 85%, 84% and 95%, respectively ($p=0.9$). In the "coast" with services dental and care coverage, resolving emergency is with the extraction, losing dental recoverables pieces, islanders also go a the public services for extracting, though a smaller proportion go seal her teeth.The extraction begins at an early stage and the risk of tooth loss is high in this population.

A75
GERMS AND MOLARS OF RATS WITH CARIOGENIC DIET, EFFECT ON ODONTOBLASTIC PROCESSES AND ADJACENT AREA

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Odontoblasts synthesize predentin, composed of glycoproteins, proteoglycans and collagen fibers that gives elasticity and stimulate mineral precipitation that harden it .Objective: To induce predentinal synthesis with a cariogenic diet to evaluate morphological changes in apical odontoblastic for weeks. Eighteen robust rats strain "l" and fifteen small strain "e" were submitted to regular diet (G1) and nine of each strain to cariogenic diet G2 (oral sucrose 10%). In three weeks, their jaws were excided, demineralized, removed type I collagen and stained with H&E. Predentin type, visibility odontoblastic processes, shape (straight or irregular) and presence of fibrillar component were evaluated with MO 1000x. Data was analyzed with Fisher exact test. In pulp dental germs of both strains and groups primary predentin was found. On strain"l" G2 14 days, there was, in molar pulps, secondary predentin ($p=0.007$) and tertiary ($p=0.03$); primary visible processes 100%; 94% straight and 6% tortuous, the visible tertiary 53%, irregular 54% and 46% embedded; both without fibrillar material; 21 days, tertiary ($p=0.009$); 10% visible, 10% straight and 90% irregular; 90% fibrillar material; 28 days, secondary ($p=0.04$), 64% visible; 79% straight and 21% irregular, 36% fibrillar materials. In strain "e" G2, 28 days, secondary, visible 37%, 100% right, 59% fibrillar material. The primary was synthesized by germs, secondary and tertiary by molars of both strain and groups. In both strain G2, we discovered irregular procesesses in primary and secondary predentins being of greater proportion compared to tertiary where fibrillar material decreased, emerging as a cause of the characteristic defects in mineralization due to diet.

A76
INHIBITORY ACTIVITY OF OREGANO (*Origanum vulgare)* ON BIOFILMS OF GASTROINTESTINAL PATHOGENIC BACTERIA

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The biofilm formation enables to *Yersinia enterocolitica and Helicobacter pylori* to survive in the human gastrointestinal tract. Antibiotics are not always effective on biofilm cells, so that the search for new natural antimicrobial compounds such as *Origanum vulgare* (oregano) is encouraged. This study determined the potential of 1 mg/ml aqueous extract of oregano (EO) to inhibit the biofilm formation of *Y. enterocolitica* and *H. pylori.* Two methods were used: a) the minimal inhibitory concentrations of biofilm (MICB) corresponding to *Y. enterocolitica* WAP 1B O:8 and *Y. enterocolitica* CLC001 1A O:7,8-8-8,19 using EO decreasing concentrations were determined by the crystal violet technique; and b) the formation of biofilms by two *H. pylori* strains, NCTC 11638 and HP796, cultured in 2 cm^2 glass slices inside Petri plates containing modified Mueller Hinton broth, was evaluated by counts of viable bacteria. Significant differences ($p \leq 0.05$) were assessed by variance analysis. For *Y. enterocolitica,* MICB was determined in 250 µg/ml of EO for both strains. A decrease of 5 times in the biofilm formation was observed in the treated group (TG) compared to the non-treated group (NTG), WAP: DO_{550} 0.508 ± 0.05 vs 2.35 ± 0.13 and CLC001: DO_{550} 0.526 ± 0.18 vs 2.896 ± 0.34. For *H. pylori* biofilms assayed against 100 µg/ml EO, a 2 log cfu/ml decrease was observed in the TG compared to the NTG for both strains ($1x10^2$ vs $1.8x10^4$ and $1.2x10^2$ vs $2.3x10^4$ cfu/ml). Results show the EO potential to inhibit the biofilm formation of both pathogens.

A77
PARTICIPATION OF AUXILIARY STUDENTS IN BIOCHEMISTRY LABORATORIES

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Auxiliary are advanced students studying acting as tutors in educational interventions done with students of Biochemistry, supervised by a teacher. Their work incluides tutorial, explaining the proposed activity; evaluating understanding of the slogans, laboratory material handling and correction of lab reports. The aim is to determine whether the participation of auxiliary motivates students to make a correct lab report. In the first quarter of the year, they performed three lab reports. Total of students: 68. The Pearson Chi Cuadrado Test was applied with a 5% relevance. Contingency Test was used to see the association variables. Results: 20 students passed the first lab report, 46 students passed the second one and 52 students passed de third one. Conclusion: students improved their academic performance as the different laboratory works were developed with the intervention of the auxiliary students.

A78
PHENOLOGY OF CASTOR OIL PLANT (*Ricinus communis*) IN THE CITY OF DIAMANTE IN THE PROVINCE OF ENTRE RÍOS

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The phenological studies together with the aerobiological approaches enable to study the relationship between reproductive phenology of the species and periods of pollination, as well as the permanence of pollen in the atmosphere. In this sense a study of floral phenology of the species *Ricinus communis* was carried out in the urban and peri-urban area of the Diamante city, Entre Rios Province. *R. communis* (common name: castor bean) is an exotic shrubby species of great interest: it is very common in the urban environment because of its invader capacity and its pollen grains have high allergenic potentiality. Ten plants were observed twice a month, along one year. Each day of monitoring, the flowering phenophases of selected shrubs were registered. The information obtained it is shown in a graph which displays the phenological changes that consist in: vegetative state (without flower buds), presence of flower buds (beginning of flowering), presence of some open flowers (the flowering is in a increasing phase), all open flowers (peak of bloom), flowers starting to wither (decline of flowering) and early fruiting and no flowers (end of flowering). This information is intended as a useful tool for studies of human health given that this pollen type might cause symptoms of respiratory allergies in sensitive people during great part of the year.

A79
QUALITY OF LIFE AND DENTAL HEALTH IN PRESCHOOLS. FROM A FAMILY PERSPECTIVE

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To establish parents' perception of their children's oral healthcare in a kindergarten located in the northwest area of Rosario. Descriptive cross-sectional study. The information was obtained through a validated dental healthcare questionnaire of parental perception connected with life standards.ECOHIS explores the impact on kids (9 questions) and on the family (4 questions). The statistic procedure was carried out according to a programme called SAS version 9.1. We operated on 131 surveys. The majority of the parents range from 31 to 46 years old. Mothers represent the 77% of the group. The most representative educational level was secondary 51, 14%. The performance of work is mostly made up of employees and housewives; thus the healthcare coverage by healthcare insurance and public health. The younger the parents, the higher the final ratings in the surveys (p=0,002). The most frequent answer of those stated in the surveys was "never/ hardly ever". Nevertheless, it is estimated with a 95% of trust, which the percentage of the parents that assure that their kids suffered the symptoms at least occasionally, is between the 11.5 and 22.7%.The percentage estimated of parents whose children had experienced occasional limitations is a minimum of 3.2% and a maximum of 6.3%. It is also estimated that the number of parents who reported problems referred to child's self-image and social interaction can be a maximum of 2.5%.From all the domains, the symptoms prevail: Their children had felt pain. Their difficulties to eat, drink, talk, loss of school lessons as well as problems referred to self-image are significantly different to the rest. Knowing parents' perceptions about the difficulties to keep their children's health requires programme interventions of dental health promotion.

A80
UNIVERSITY EXTENSION, CAN ENABLE ON COMMUNICATION SKILLS AND TEAMWORK?

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Since 2010 Biochemistry, subject of medicine, has carried out a project of university extension. It consists of workshops about physicochemical and biology dictated by medical students to students of inclusive school -School No. 3096 "Nicolas De Tolentino", Rosario, Argentina-. In 2014, 27 students were surveyed about the value of this and asked to self-assess if they managed to achieve communication skills and teamwork. Results:* Provide support and containment: 5 in 10 students consider important and 4 in 10, essential. * Provide sufficient and appropriate information: 2 in 10 important and 7 in 10 indispensable. * Establish clear and effective written communication: 4 in 10 important and 6 in 10 indispensable. 1 student felt that this competition is not important. * The probability of achieving this competition, p = 0.74, 7 in 10 students achieved this competition. * Teamwork: * Taking a positive attitude in order collaboration with other partner: 5 in 10 important and 4 in 10 indispensable. 1 student did not answer. * Assess skills of the members: 6 in 10, important and essential for 4 in 10. 1 student did not answer. * The chance of having succeeded, p = 0.81, 8 in 10 students achieved this competition. Conclusion: workshops generate knowledge and development of skills such as communication and teamwork; and also it enables future professionals to take responsibility and commitment to social integration and awareness of values.

AUTHOR INDEX