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L.1.**BIRDS AS ENVIRONMENT INDICATORS IN URBAN GREEN SPACES***Echevarria AL.**Ornitología. Instituto de Vertebrados. Fundación Miguel Lillo. Miguel Lillo 251. San Miguel de Tucumán. Tucumán.**E-mail: adaechevarria@yahoo.com.ar*

One of the leading causes of changes in landscape is the process of urbanization, which is considered a growing threat. An increase in the transformation of natural landscapes into urban environments is expected in this century due to the high population growth rate, especially in developing countries. This prediction has attracted interest in determining the role urban green spaces play in the conservation of biodiversity. Birds are expected to reflect changes in a system more clearly than other vertebrates due to their morphological, ecological and biological features, which makes them good environment indicators. Studies on urban biodiversity show that features of cities related to green spaces can be important in the conservation of biodiversity, given that local fauna and especially birds that use these resources seem to contribute to the long term functioning of these ecosystems. Most studies on urbanizations are concentrated in the northern hemisphere; in the southern hemisphere, knowledge of urban birds is incipient and scarce. Two native urban green spaces of Tucumán were studied which demonstrated the importance of the relationship between vegetation structure and high native bird richness. The value of green spaces planted with native species similar to the original forest should be appreciated. Urban wildlife shows green patches –regardless of their size- can serve as a reference in planning future urbanization processes as well as in restructuring existing ones. At the same time, they stress the value of those green spaces in the quality of life of urban dwellers.

L.2.**EXTINCT MEGAFUNA AND PLANT ANACHRONISMS***López Anido F.**Cátedra de Genética, Facultad de Ciencias Agrarias, Universidad Nacional de Rosario.**E-mail: felopez@unr.edu.ar*

Any plant structure which is not functionally justified could be considered as an anachronism; they include fruits, seeds, stalks and growing habits attributes. Extinct megafauna comprises generally mammals species, with an adult weight over 55 kilograms, that suffered mass extinction at the end of the Pleistocene. In this context many of the plant anachronisms are the result of evolution forces that operated for thousands of years until the animal partnerships disappeared. This interpretation of plant anachronisms was first postulated by Janzen, D. and Martin, P. in the 1982 paper “Neotropical anachronisms: The fruits that gomphotheres ate”, *Science* 255: 19-27. The lack of fruit and seed dispersal of certain tropical trees was interpreted, by these biologists, as a megafauna dispersal syndrome. *Crescentia*, *Gleditsia*, *Enterolobium*, *Maclura*, *Diospyros*, *Carica*, *Persea*, *Asimina*, *Prosopis* and *Cucurbita* are some of the genus considered as bearing some degree of this syndrome. In contrast to some plant-animal associations, which are at the species-species level, these mutualisms operated, from the animal side, with some alternative candidates as Mastodons, Mammut, Glyptodonts, Toxodons and Giant ground sloths among others. As a consequence of the absence of original dispersers plants bearing the syndrome are limited to hydrochory, barochory and antropochory, reducing or limiting its original distribution area. Africa and Asia, the continents where megafauna survived bring analog evidences. Another sets of anachronisms are those related to defense against herbivory as thorns, spines, hardwood and divaricated growing habit.

L.3.**TAKING BIODIVERSITY TO SCHOOL***Crisci JV.**Museo de La Plata*

Biodiversity refers to the variety and variability among living organisms and the ecological complexes in which they occur. Today that biological treasure is facing time of ruin and devastation. Biodiversity is being lost around the world in an escalating epidemic of extinctions. Effective action to conserve and sustainably use biodiversity must be based on accurate scientific information. Biological systematics is one of the main tools that science has to map biodiversity. Biological systematics is a multidimensional scientific discipline that describes, names, classifies, and determines relationships among the Earth's biota. To impede species extinction, the first step is to know them scientifically: their systematic placement, geographic distribution, ecology, and to what degree they are vulnerable to environmental changes. We need a new vision for biological diversity for a healthy planet and a sustainable future for humankind. What the future holds in store for individual human beings and the world depends largely on the wisdom with which humans use science and technology. And that, in turn, depends on the character, distribution, and effectiveness of the education that people receive. Education is an essential management tool that recognizes the central role of people in all nature conservation efforts. Indeed, although a conservation goal may be focused on a biological problem, effective conservation strategies must incorporate communication and educational programs designed to affect people's awareness, attitudes, and behaviors toward natural resources and land management. The problem of biodiversity poses new challenges to education systems: how can schools prepare students, tomorrow's citizens, to become more sensitive to the loss of species and to understand the role of species, especially through systematics, in maintaining biodiversity. The objectives of this contribution is to justify the need of taking biodiversity to school through biological systematic, evolutionary biology, and the nature of science, and present and evaluate three previous successful attempts to take biodiversity to school.

L.4.**USE OF BIOINFORMATICS TOOLS FOR THE ANALYSIS OF THE EPIGENETIC REGULATION OF PROTEINS INVOLVED IN TUMOR PROGRESSION**

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Malignant transformation is associated with loss of cell polarity. We are focused on the study of polarity proteins, such as the human homologous of the *Drosophila* tumour suppressor, Disc large 1 (DLG1). DLG1 locates at cell-cell contacts, where it has both, structural and signalling roles. It has been proposed to have tumour suppressor functions: it inhibits epithelial cell proliferation; it is a target of several viral oncoproteins and its expression is markedly reduced or absent in the late stages of different tumours. However, DLG1 has also been proposed to have oncogenic functions: mainly, DLG1 is increased and delocalized in the intermediate stages of the malignant progression. We want to characterize the regulation of DLG1 in order to understand its function in carcinogenic processes. Altered patterns of DNA methylation are key mechanisms in tumour progression. To study whether epigenetic regulation could explain the unusual pattern of DLG1 in biopsies, we focus on the analysis of the methylation status of its promoter. Using several bioinformatics tools, we analysed the promoter and established the presence of a region with a high density of CpG dinucleotides, liable to be regulated by methylation. We applied the method of treatment of genomic DNA with sodium bisulfite, subsequent PCR and sequencing, establishing reliably the status of each CpG. We designed BSP primers, suitable for amplification of bisulfite-treated DNA. The goal of this study is to establish if there is a correlation between promoter methylation status and DLG1 expression.

L.5.**DETECTING *Solanum pimpinellifolium* GENOMIC SEQUENCES TO IMPROVE FRUIT QUALITY IN TOMATO**

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Eighteen Recombinant Inbred Lines (RILs) were developed from a cross between the cultivar Caimanta (Cai) and wild accession LA722 (*S. pimpinellifolium*, P). New genetic combinations were generated from these elite genotypes. Five RILs (ToUNR1, ToUNR8, ToUNR9, ToUNR15 and ToUNR18) were crossed in a diallel design without reciprocal to obtain ten Second Cycle Hybrids (SCH). These 15 genotypes were characterized for eleven Fruit Quality Attributes (FQA). AFLP (*Amplified Fragment Length Polymorphism*) and SRAP (*Sequence Related Amplified Polymorphism*) molecular markers (MM) profile were obtained. The observed genetic variability for FQA was compared to the polymorphism detected by MM using multivariate models. A high percentage of total polymorphism (%PT) was detected for both, AFLP and SRAP markers, between Cai, P and their F1. A high %PT was also detected for both markers among the RIL and SCH. Consensus ratio observed with Generalized Procrustes Analysis was 73% and 75% between the classification produced by the phenotypic and AFLP and SRAP, respectively. The estimated value for each type of markers suggested that there is a high correlation between the ranking obtained by the MM and FQA. The results demonstrate that wild species can be donors of genes for traits that modify fruit quality and increase genetic variability. The application of multivariate methodologies that allow joint analysis of the phenotype of this new genetic material and the degree of polymorphism detected by DNA markers, are new bioinformatic tools that we now have to facilitate the improvement of the species.

L.6.**INVASIVE PLANTS, ONE OF THE MAIN THREATS TO BIODIVERSITY**

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The introduction of plants in areas outside their original distribution and their settlement and dispersion in natural ecosystems is one of the major environmental problems that affect biodiversity conservation. These exotic invasive species may cause the displacement of native flora, with subsequent changes in the original structure of natural communities. Moreover, they may cause severe economic damage when they become plagues or by causing health problems or building deterioration. Currently, the number of introduced species is rapidly increasing, because of urbanization, trade globalization and tourism. Although, in general, problems are related to the introduction of exotic species, the issue also includes taxa in sub specific categories, as well as the introduction of exotic genes. In this regard, between the environmental risks of genetic engineering is the impossibility to predict the behavior of genetically modified organisms (GMO) in the environment, which could be considered as exotic or introduced organisms. Because of the growing impact of biological invasions, it is important to perform research and to develop management strategies to minimize current and future problems. The best management strategy to avoid plant and other exotic organisms' invasions is one based on caution and prevention, without losing sight of the unpredictable nature of living things.

1. HEPATOCYTE TRANSPLANTATION ISOLATED FROM RAT LIVERS WITH PRENEOPLASTIC FOCI. IMPACT OF THE AMOUNT OF CELLS TRANSPLANTED

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Hepatocyte transplant is proposed as an alternative for patients waiting for hepatic transplant. The hepatocellular carcinoma is developed in 3 states: initiation (I), promotion (P) and progression. The subclinic IP state of the donor (D) liver could be dangerous for the recipient (R). We analyzed if R developed preneoplasia after being transplanted with hepatocytes isolated from livers with IP foci (IPF); and we correlated the number of transplanted cells with the presence of IPF in the R. Adult male Wistar rats (300-350 g) were used as D (n=6) and R. To induce IPF, Ds were subjected to a 2-phase model of rat hepatocarcinogenesis. Rs were partially hepatectomized and were divided in 2 groups (G): rats that received 30.000 (G30) or 150.000 (G150) hepatocytes. 3 D and 6 R per D were used for each G. Times of sacrifice: 7 and 21 days postrasplant (n=3). Samples of the whole liver were fixed in formaldehyde 10 % P/V and processed for paraffin embedded. The presence of IPF was determinate using anti rGST-P. The total area occupied by hepatic tissue (cm²) was calculated for each R by computerized image analysis and the number of IPF and IP isolated cells rGST-P positives (IPC) were counted. Results, expressed as means ± sd per unit of tissue area, were analyzed with ANOVA. No statistical differences were obtained for the amount of IPF or IPC, neither taking in account the sacrifice time not with the amount of cells transplanted. R developed IPF when they were transplanted with hepatocytes isolated from IP livers and the amount of cells used did not modify the number of IPF.

2. COMPARISON OF TWO DIFFERENT TREATMENTS TO INDUCE SUBCLINIC HEPATIC PRENEOPLASIA IN RATS

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A model to induce subclinic hepatic preneoplasia (SHP) used dietilnisamyne (DEN, inductor) and 2-acetylaminofluorene (2-AAF, promoter) (DEN150 model). Both chemicals induce cholestasis and fibrosis. We compared DEN150 model whit other developed by us (DEN200), to induce SHP in an easier and less traumatic way for treated animals. Adult male Wistar rats (300-350 g) were divided in 3 groups (G, n=3 each). G1: control. G2, DEN150: 2 doses of DEN (150 mg/Kg body weight) were administrated i.p. 2 weeks apart and then 2-AAF (20 mg/Kg body weight) was given to rats by gavage 4 times per week, 3 weeks. G3, DEN200: a unique dose of DEN (200 mg/kg body weight) was administrated i.p. and 2 weeks later 2-AAF (equal dose and way of administration than in DEN150) was given 2 times per week, 3 weeks. GOT, GPT, Cholinesterase and prothrombin percentage (% P) were determinate. Liver samples were fixed in 10% formaldehyde and process for paraffin embedded. With H&E we analyze cholestasis counting the number of bile ductules (BD) in 20 microscopic fields, expressed as N° BD/microscopic field. With Direct Red 80/Picric Acid we studied fibrosis measuring total collagen amount (TC) by a computerized image method in 10 microscopic pictures of each animal (n=3) from of each G and expressed as area occupied by TC/picture area. With anti rGST-P: we determinate the presence of preneoplastic foci (PF). PF were estimated as percentage of the total tissue. DEN200 had fewer BD and less fibrosis than DEN150 and developed fewer PF. DEN200 is effective to induce SHP in better conditions for rats.

3. SINGULAR CLINICAL ASPECTS IN CASES OF ACTINOBACILLOSIS IN BOVINE FROM THE AREA OF INFLUENCE OF THE FACULTY OF VETERINARY SCIENCES OF U.N.R.

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In productive units within the area of the Faculty of Veterinary Sciences, NUR, bovine actinobacillosis cases were detected during 2012. The aim of this work is to inform the special characteristics of these clinical cases. Their main characteristics were abscedations of considerable size and high prevalence, and a fast evolution of the lesions. The lesions, defined microscopically as abscesses of the regional lymphonodes, reached a circumference of 25 cm within 10 days. Exudates showed inflammatory cells of mixed population and cell debris. Samples of a representative case were submitted to the National Institute of Infectious Diseases Dr Carlos Malbran. Identification was carried out through the phenotypic profile and partial sequencing of the 16S Rnm gen. The percentage of similitud with the reference strain *Actinobacillus lignieresii* NCTC 4189 was 99%. It is concluded that the general features of these manifestations do not totally correspond with literature descriptions, and especially contrast with the typical chronicity of actinobacillary lesions, the absence of the characteristic drusen and of lesions in other soft parts of head and neck.

4. NEW RECORDS OF *Leopardus geoffroyi* IN THE BASIN OF THE CARCARAÑA RIVER, IN THE SOUTH OF THE PROVINCE OF SANTA FE

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CICYTTP-CONICET. Diamante, Entre Ríos.

The Geoffroy's cat (*Leopardus geoffroyi* d'Orbigny y Gervais, 1844) is one of the predominant mammals in the pasture lands of the "Pampa" region. On this work we present new records of *L. Geoffroyi* in the basin of the Carcaraña River and their association with some environmental variables. The methodology used was based on lineal transects in search of signs of activity. Trap cameras were used as support.

In order to establish associations between the records of presence of *L. Geoffroyi* and the different environmental variables we produced a GIS- generated data base: 44 records of presence of *L. Geoffroyi* were found in all the seasons. The relative abundance for the xerophilic forest was: 0, 52 signs/ km; 0, 31 signs / km for halophilic communities and 0.01 signs / km for farming lands. The distance to bodies of water showed variations from 0 to 606 m. The distance to towns was between 1850 and 11550 m. The distance to roads varied between 0 and 8120 m. The records were found at an average height of 67,65m (DS=20, 61) and the average grade of slope was 0, 94% (RQ=0, 47). On this research the biggest quantity of records was found in xerophilic forests and halophilic communities. This fact shows that although *L. Geoffroyi* tolerates cultivated and peridomestic areas; it prefers areas with dense vegetation, mainly forests. To sum up, the highest index of relative abundance and records of presence of *L. Geoffroyi* was obtained in xerophilic forests in the spring-summer season, reproductive period of the species.

5. ANALYSIS OF VIGOR IN *Juglans nigra* SEEDS BY ELECTRICAL CONDUCTIVITY TEST

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Seed vigor can be determined using the Electrical Conductivity Test, a biochemical test which indirectly assesses the degree of integrity of the cell membranes by determining the amount of ions leaked out into the imbibition solution. Ion leakage is inversely proportional to the integrity of cell membranes. The objective of this work was to analyze the quality of *Juglans nigra* fruits using the Electrical Conductivity Test. Fruits of two weight ranges (12-16 g, and 21-26 g) with their pulp removed were rinsed with water and stratified in a chamber at 5°C for 4 months. After the stratification period, thirty fruits of each weight range were placed individually in 100 cm³ beakers, with 50 cm³ of deionized water with low electrical conductivity (0-2 μS cm⁻¹) (30 replications per weight range). The beakers were covered with film and incubated in a chamber at 23°C. Ion leakage was measured daily on each individual fruit until values remained constant for three consecutive days, which occurred between 12 and 15 days after the beginning of the experiment. Electrical conductivity averages were expressed as S μm⁻¹ and as μS cm⁻¹ g⁻¹. When electrical conductivity was expressed as μS cm⁻¹ g⁻¹, lighter seeds showed higher leakage values than heavier seeds, indicating a higher quality of heavier seeds. Since the leakage values in seeds of both weight ranges increased gradually and evenly throughout the incubation period, the assessment can be performed between 24 and 48 hours after starting incubation, thus providing a fast and early evaluation of seed vigor.

6. MORPHOMETRIC STUDY ON THE RABBIT APPENDIX INTRAEPITHELIAL LYMPHOCYTIC POPULATION

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M cells located in the follicle-associated epithelium of the rabbit appendix transport organisms and particles from the gut lumen across the epithelial barrier. Notoriously relevant for mucosal immunity because of that process, morphological changes in intraepithelial lymphocytic population have been registered. In contrast, this communication deals with possible morphological changes in that population when the antigen is subcutaneously administered since no related information has been found at present in this regard. Twenty adult New Zealand rabbits were divided as follows: G1: control. G2: adjuvant only. G3: sensitized and euthanized 24 hours after the first sensitization G4: sensitized and euthanized 24 hours after the second sensitization. Sensitization was performed with 100 μg of ovalbumin in Freund's complete and incomplete adjuvant administered twice subcutaneously at a 15 days interval. Appendix specimens were stained with H&E and Giemsa and studied through software for image analysis. Results, expressed as mean ± standard error, were statistically processed employing ANOVA test with a 0,05 significance level. Total intraepithelial lymphocytes were: 10,10 ± 0,67 in G1; 9,72 ± 0,72 in G2; 9,15 ± 0,53 in G3 and 7,92 ± 0,45 in G4 (p=0,04). Blasts were: 8,1 ± 0,38 in G1; 7,6 ± 0,49 in G2; 7,1 ± 0,29 in G3 and 5,9 ± 0,40 in G4 (p=0,0008). Cytes were: 2,02 ± 0,47 in G1; 2,1 ± 0,31 in G2; 2,08 ± 0,39 in G3 and 2,01 ± 0,33 in G4 (ns). Therefore, subcutaneously immunized rabbits would show a lower afflux of immunocompetent cells to the M basolateral pocket-like structures and its lower activation would be in line with blast decrease probably affecting the usual mucosal immune response.

7. RUMINAL DEGRADATION KINETICS OF CHEMICAL COMPONENTS OF ALFALFA HAY

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The objective was to evaluate the fit of the data obtained on the kinetics of degradation in the *in sacco* rumen of Dry Matter (DM), Organic Matter (OM), Crude Protein (CP), Non-Structural Carbohydrates (NSC), Acid Detergent Fiber (ADF) and Neutral Detergent Fiber (NDF) of alfalfa hay. To measure rumen degradation kinetics (RD) nylon bags (pore size: 62 microns) were incubated with 3 g of MS (17mgMS/cm²) of sample, previously dried at 60 ° C, ground and sieved with a 2 mm sieve, for 0, 2, 4, 8, 12, 18, 24 and 48 h in the rumen of three sheep fitted with ruminal cannula fed alfalfa hay during two periods. The data in RD of DM, OM, CP, NSC, ADF, and NDF were fitted to the model of Orskov and McDonald (1979): RD = a + b (1 - e^{-ct}), being a: soluble fraction, b: slowly degradable fraction, and c: degradation rate. The alfalfa hay used had the following chemical composition: 89.64% DM, 90.4% OM, 3.7% of NSC; 4% lignin, 12% CP, 46.2% ADF and 57.9% NDF. The results are shown in the table.

Estimators	DMRD	OMRD	CPRD	NSCRD	ADFRD	NDFRD
a	17.84	14.53	7.84	39.05	-0.53	3.08
b	38.44	38.34	62.68	61.31	34.14	39.65
c	0.096	0.153	0.064	0.070	0.053	0.057

The fast and slowly rumen degradable fractions of DM and OM were similar, only with a variation in the degradation rate of 56% higher in OMRD respect of DMRD. The ADF and NDF degradability was similar in all parameter, with low soluble and intermediate slowly degradable fractions and degradation rates. NSC degradation was around 100% (a + b). The CPRD presented a low fraction a, high fraction b and c intermediate. The observed data gave a good fit, with square R between 0.60 and 0.97.

8. SPARSE DATA PROBLEM IN AGE-PERIOD-COHORT MODELS: BAYESIAN VERSUS TRADITIONAL APPROACH

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Cancer incidence and mortality data are generally presented as stratified quantities in five-year age groups and calendar periods; for certain types of events, the youngest age groups usually present few cases. This fact causes drawbacks when fitting an Age-Period-Cohort (APC) model through the traditional Maximum-Likelihood (ML) method, since it produces unstable estimations and convergence problems. The use of Bayesian methods has the advantage of producing estimations which are not affected by sample size and are stable in the presence of sparse data and zero-counts. In this paper mortality rates of bladder cancer in Argentina (1980-2009) are fitted using an APC model, with Poisson random component and logarithmic link, using both approaches: the ML and the Bayesian one. Data is available for 6 periods and 16 age groups, the 7 youngest present few cases or even null frequencies. In the Bayesian estimation of the model a non-informative prior distribution is assigned to each parameter. Mortality rates are estimated using both approaches considering one scenario for all age groups and other for only those age groups which do not present sparse data. The obtained results show that Bayesian estimations are not affected by the presence of sparse data in the youngest age groups, whereas ML estimations are more unstable in the presence of empty cells.

9.

DENTAL BRUSHING MODALITY, FORMAL EDUCATION LEVEL IN FISHERMEN OF ROSARIO CITY AND ISLANDS

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Caries and periodontal disease, tooth loss causes, related to standards knowledge expressed by families, schools and dentists to preserve teeth integrity. Fishermen population living in City north coast have "Remanso Valerio" Medical-Dental Centre, Rosario and Baigorria cities centers. City neighboring islands families, living away from centers, when having a dental emergency should move to Rosario. "Charigüé" island inhabitants have primary school and medical center but lack dentist care; "Invernada" have a school but no health center. Our aim: to relate educational level with brushing adherence of fishermen and families. People 15-45 years old, both sexes, place of origin and study years were separated in two groups -GA until 6 years, -GB up to 12 or more; brushing modalities -a: everyday, -b: sometimes, -c: never. Chi² analysis, 5% was applied. Fifty fishermen and families were interviewed, 40% living "Rosario coast", 38% "Charigüé", 22% "Invernada". In coast 60% males, 90% natives; "Charigüé" 63% males, 89% natives; "Invernada" 55% males, 46% natives. Level education "Rosario coast" -GA 60%, -GB 40%; "Charigüé" -GA 32%, -GB 68%; "Invernada" -GA 18%, -GB 82% (p=0.04). Brushing was: "Rosario coast" -a: 25%, -b: 45%, -c: 30%; "Charigüé" -a: 74%, -b: 21%, -c: 3.5%; "Invernada" -a: 55%, -b: 36%, -c: 9% (p=0.03). Rosario coastal population was integrated by migrants while a large percentage of islanders were natives. In islands educational level was higher, prevailing daily brushing mode, while in Rosario coast education levels were lower and brushing sporadic or absent.

10.

CARBOHYDRATE METABOLISM, ANTHROPOMETRY AND MONOSODIUM GLUTAMATE IN MALE RATS WISTAR

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We evaluated the effects of oral MSG administration in male Wistar rats treated from weaning. We worked with two groups of male rats (n = 6 each group) Control (C): NaCl 0.857 g/kg body weight per day and (T): MSG at a dose of 2.5 g/kg body weight per day, during 4 months. Parameters: body and retroperitoneal fat weight, abdominal circumference, fasting plasma glycemia and insulin, HOMA (IR: insulin resistance), intravenous glucose tolerance (kTTG), insulin tolerance (kTTI) tests and glycogen concentration in liver tissue. Results: weight gain (g) C: 243.2±6.4, T: 272.7±13.5*; abdominal circumference (cm) C: 16.71±0.24, T: 18.38±0.51*; retroperitoneal fat (g) C: 0.398±0.032, T: 0.523±0.030*; glycemia (g/l) C: 0.80±0.03, T: 0.86±0.02; insulin (ng/ml) C: 0.52±0.11, T: 1.19±0.10*; HOMA: C: 2.49±0.44, T: 6.02±0.47*; kTTG (% min⁻¹) C: 1.93±0.08, T: 1.24±0.20*; kTTI (% min⁻¹) C: 6.46±0.33, T: 4.20±0.69*; liver glycogen (mmol/g wet tissue): C: 202.7±5.5, T: 279.5±2.1*. MSG treated rats showed greater weight gain and although Lee index and BMI did not change, there was a significant increase in retroperitoneal fat and waist circumference. GMS induced alteration in kTTI, kTTG with normoglycemic, hyperinsulinemia and increased HOMA index (RI). Hyperinsulinemia be enough to cover the excessive demand for insulin conditioned by IR. While the IR is increased gluconeogenesis, in this case most of the formed glucose is deposited as glycogen since there is normoglycaemia, as can be observed in rats treated with diets rich in sucrose and fructose.

11.

ULTRASTRUCTURAL STUDY OF THE SMALL INTESTINE OF PLAINS VISCACHA (*Lagostomus maximus*)

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The objective of this study was to describe the ultrastructure of the small intestine of *Lagostomus maximus* by transmission electron microscope (TEM). Samples from duodenum, jejunum and ileum were fixed in 3% glutaraldehyde in cacodylate buffer 0.1 M (pH 7.3) and routinely processed for TEM. In the epithelium of the intestinal mucosa four mature cell types were identified: enterocytes, goblet cells, Paneth cells and enteroendocrine cells. Enterocytes showed uniform and regular microvilli and presented on their lateral surface junctional complexes and interdigitations. Goblet cells showed numerous mucous granules distending the apical region of the cell and other organelles distributed in the cytoplasm. Paneth cells were observed in the bottom of the crypts. They had a basally located nucleus and the cytoplasm of the perinuclear region contained the rough endoplasmic reticulum and Golgi apparatus. The granules lay in the supranuclear region. In the basal portion of the intestinal glands enteroendocrine cells with abundant secretory granules were detected. In the duodenal submucosa, Brunner's glands with mucous cells were identified. These gland cells presented abundant electrolucid granules in their apical cytoplasm, numerous mitochondria, and an extensive rough endoplasmic reticulum. The existence of highly specialized cells in the small intestine of *L. maximus* is related to the multiple digestive, absorptive, endocrine and immunological functions performed by the intestinal mucosa.

12.

EVALUATION OF BIOCHEMICAL PARAMETERS AS INDICATORS OF GESTATIONAL HYPERTENSION. PRELIMINARY STUDY

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Gestational hypertension (GH) is the only clinical sign present in the initial stage of preeclampsia, thus representing one of the first causes of maternal death. Bearing in mind that the injury associated to arterial hypertension affects multiple organs including the kidney, the aim of this study was to evaluate whether microalbuminuria (MAU) and β N-acetylglucosaminidase (β NAG) would serve as indicators of GH. Considering that GH may evolve towards preeclampsia-eclampsia, we analyzed the levels of soluble vascular endothelial growth factor receptor 1 (sVEGF R1) in this disease. We studied a group of patients with a diagnosis of HG (H; n=6). Pregnant women without associated diseases were included as the control group (C; n=15). MAU (immunoturbidimetric method), β NAG (colorimetric method) and urinary creatinine (CrU, Jaffé's method) were determined in morning first urine. sVEGF R1 (ELISA) was determined in plasma. The results obtained (mean±SD) for H and for C respectively were: MAU (mg/gCrU): 25.7±23.9 vs 10.5±7.1; β NAG (U/gCrU): 13.9±4.5 vs 3.5±2.2 and sVEGF R1 (pg/ml): 1101.4±713.9 vs 907.8±511.3. Levels of β NAG were higher for H than for C (p=0.0008), while no significant differences were found in the levels of MAU and sVEGF R1 between H and C (p>0.05). We conclude that β NAG would be a better non-invasive parameter for the characterization of pregnant women with GH.

13. EVALUATION OF TRANSFERRIN IN SEMINAL FLUID FOR THE STUDY OF REPRODUCTIVE FUNCTION

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Transferrin (Tf) is a glycoprotein iron's transporter. It's located in blood and other fluids. There are known different types, including serum Tf (Tfs), and testicular Tf (Tft) secreted by Sertoli cells. It is involved in the transport of iron (Fe) from serum to germinal cells. The objective of this work was to develop a technique to determine Tf in seminal plasma (SP). Semen and serum samples of 30 healthy volunteer controls were studied. The samples were obtained by blood withdrawing and masturbation. Semen study was performed according to 2010 WHO criteria. SP was separated from spermatozoa by centrifugation. Tf evaluation in each control was performed on serum and SP. To quantify Tfs and Tft, total Fe binding was calculated by indirect spectrophotometer method (UIBC/TIBC, WIENER LAB®). In Tft, commercial technique was modified by adjusting pH and treating samples with Hialuronidase. Results are expressed as mean±SD, Tfs: 25,77±7,79µg/ml and Tft: 24,11±6,21µg/ml according with values found by other authors using different methods. Although it is necessary to analyze a large number of samples, this technique is practical, simple and could be applied to the Tft study. The role of Tf in the testes is still unknown but it is believed that participate in the development of germ cells. Tft would carry out a potential sperm protection, training, acrosome reaction and sperm-oocyte interaction role. We propose this method to determine Tft as possible biomarker of reproductive function.

14. ADVENTITIOUS SPECIES OF THE FAMILY APIACEAE IN THE SANTA FE PROVINCE (ARGENTINA)

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The Family *Apiaceae* (=Umbelliferae) is classified in the Order *Apiales* (sensu APG-III). They consist of annual or perennial herbs, generally with alternate leaves, entire or deeply dissected, with conspicuous leaf sheath. Flowers arranged in compound umbel or in capitulum, actinomorphic, pentamerous, inferior ovary, 2-carpels, 2-locular. Fruit schizocarp, with two mericarps supported by a carpophore. The objective of this work is to begin the taxonomic study of the *Apiaceae* Family and the geographical distribution of adventitious taxa for the Santa Fe province. We worked with specimens preserved in the herbaria UNR (Rosario), SF (Esperanza) and SI (Darwinion, San Isidro); together with bibliographical revision, field observation and lab work to confirm the specimens' identity. In Argentina it is represented by 38 genera of which 16 can be found in Santa Fe. Of these nine are native: *Ammoselinum* Torr. & A. Gray (1 species), *Apium* L. (1 species), *Bowlesia* Ruiz & Pav. (1 species), *Centella* L. (1 species), *Cyclospermum* Lag. (1 species), *Daucus* L. (1 species), *Eryngium* L. (17 species), *Hydrocotyle* L. (6 species) and *Lilaeopsis* Greene (1 species). The remaining seven are adventitious and the majority of these species are common weeds in winter crops. With only one species each of them: *Conium* L. (*C. maculatum* L. -the common 'cicutá'), *Coriandrum* L. (*C. sativum* L.), *Foeniculum* Mill. (*F. vulgare* Mill. -the 'hinojo'), *Pastinaca* L. (*P. sativa* L.), *Tordylium* L. (*T. maximum* L.) and *Torilis* Adans. (*T. nodosa* (L.) Gaertn.). Whereas with two species there is *Ammi* L. (*A. majus* L. and *A. visnaga* (L.) Lam.). Taxonomic information, illustrations, a distribution map and keys for the identification of taxa based on morphological characters are provided.

15. PRELIMINARY STUDY OF THE FAMILIES Rhamnaceae AND Vitaceae IN THE SANTA FE PROVINCE (ARGENTINA)

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The objective of this work is to begin the taxonomic study and the geographical and ecological distribution of the *Rhamnaceae* and *Vitaceae* Families for the province of Santa Fe. These families were classified inside the order *Rhamnales*, but currently are placed as follows: *Rhamnaceae* in Order *Rosales* and *Vitaceae* in Order *Vitales* (sensu APG III). We worked with specimens preserved in the herbaria UNR, SF and SI; together with bibliographical revision. Our preliminary results show that the *Rhamnaceae* are thorny shrubs or trees with simple leaves, actinomorphic perfect flowers. Fruit: schizocarp or drupe. This family is represented in Santa Fe by 4 genera with only one species each: *Condalia* Cav. with *C. buxifolia* Reissek; *Discaria* Hook., with *D. americana* Gillies & Hook.; *Scutia* Brongn., with *S. buxifolia* Reissek; and *Ziziphus* Mill. with *Z. mistol* Griseb. The *Vitaceae* are woody climbing plants with tendrils opposite to the leaves. Simple or composite opposite leaves. Perfect actinomorphic small flowers. Fruit a berry. This family is represented by one genus: *Cissus* L., with 3 species and 1 subspecies: *C. palmata* Poir., *C. striata* Ruiz & Pav. subsp. *argentina* (Suess.) Lombardi and *C. verticillata* (L.) Nicolson & C.E. Jarvis. Taxonomic information, a dichotomic key based on morphological characters, illustrations and a distribution map are provided.

16. NATURAL AND ARTIFICIAL PRODUCTS CONSUMPTION, SOURCES OF IRON FOR UNIVERSITY STUDENTS

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Heme is iron from animal source. Its main source is red meat. As a contrast, nonheme iron, from plant source, it is found in legumes, green leaved vegetables, etc. The daily recommendations are 18 mg/day in women and 8 mg/day in men. The objective of this work was to know the consumption of the main iron source products (natural and artificial) in university students and to compare the percentage that chooses one or the other. In order to do so, a volunteer and anonymous survey was carried out among university students from Health public faculties. To analyze them it was considered that a person consumes 250gr of cow meat, 150gr of spinach, 200gr of egg, 100gr of lentil and 150gr of rocket. It was also considered the iron concentration of that food: cow meat (6.25mg), spinach (6mg), egg (4.4mg), lentil (7.1mg), rocket (2.19mg), iron-capsules (109mg/capsule). 215 students were surveyed, 156 women and 59 men. The food preferred by women was cow meat (92.30%), egg (87.18%), spinach (66.67%) and lentil (56.41%); whereas men coincided in their preference for cow meat (98.31%), egg (93.22%), spinach (57.63%) and lentil (54.24%). For both sexes, the least preferred product was the iron capsule (3.85% in women and 3.3% in men). Despite the fact that lentil is the food which contains the highest concentration of iron, students placed them in fourth place, always preferring cow meat. It was concluded that most students preferred the animal sources of iron instead of the plant ones, being this preference right if the aim is to incorporate iron, given the fact that its availability is four times higher compared with the plant sources. Despite all this, we consider as a healthy eating habit to choose a rich diet with various nutrients.

17. EVALUATION OF PREFERRED VITAMIN C (Vit. C) IN UNIVERSITY STUDENTS

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Vit. C is an essential nutrient not produced by mammals which has antioxidant activity and increases the organism defences. The objective of this work was to evaluate which Vit. C products university students preferred. In order to do so, a volunteer and anonymous survey, ethically unobjectionable, about natural products containing Vit. C was carried out between February and April among university students from Health public faculties, both state and private, 156 women and 59 men, between 17 and 36 years old. To analyze them, it was considered the Vit. C content for each 100gr, according to the Argentine Food Code, in: orange (O) (51), tangerine (Ta) (72), tomato (To) (85), milk (M) (12,3) and cream (Cr) (0,8). Table of preferred Vit.C in men and women

	O		Ta		To		M		Cr	
	Men	Wo	Men	Wo	Men	Wo	Men	Wo	Men	Wo
D	24%	22,5%	12%	9%	37%	44%	25%	26%	3%	6%
W	40%	37%	17%	17%	39%	34%	20%	8%	42%	26%
O	19%	22,5%	25%	41%	8%	8%	20%	28%	19%	37%
DC	17%	18%	46%	33%	16%	14%	35%	38%	36%	31%

D: daily W: weekly O: occasionally DC: doesn't consume. Wo: women.

It was concluded that women preferred tomato (86%), orange (82%), cream (69%), tangerine (67%) milk (62%) whereas men preferred tomato (84%), orange (83%), milk (65%), cream (64%) and tangerine (54%) contributing with antioxidant activity and the defence of the organism.

18. EVALUATION OF ANTIBACTERIAL ACTIVITY OF EXTRACTS FROM *Aspergillus parasiticus* OBTAINED APPLYING OSMAC APPROACH

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Microorganisms, including fungi, are still the most important natural source of active metabolites and the most promising towards the search for new antibacterial agents. The ability to activate different biosynthetic pathways in the metabolism of a microorganism by alteration of cultivation parameters is a strategy of diversification of natural products known as OSMAC (One Strain Many Compounds) approach. In this work we have studied how changes in metabolism of *Aspergillus parasiticus*, caused by variation in nutrients, affected production of metabolites with antibacterial activity. *A. parasiticus* CCC 100-71 (CEREMIC Culture Collection) was cultured for 28 days (28°C, darkness, no agitation), in potato dextrose broth (PDB), Sabouraud glucose (SGB), Czapek (CB) and rice broth (RB). After incubation, the cultures were filtered to separate biomass from broth and then extracted, either, with EtOAc. Antibacterial activity was carried out with agar-overlay bioautography on thin-layer chromatography on *Escherichia coli* ATCC 25922 and *Staphylococcus aureus* ATCC 25923. Crude extracts from filtrates SGB, PDB and RB showed activity against *E. coli* at 100 µg/spot, while extracts from biomass in PDB and SGB and filtering on PDB, inhibited *S. aureus* to a loading of 25 µg/spot. Our results show the capacity of *A. parasiticus* to produce various secondary metabolites under the conditions tested and reinforces the idea that OSMAC is an advantageous strategy to get new antibiotics.

19. TOLL LIKE RECEPTOR 2 (TLR2) EXPRESSION AND IL17 PRODUCTION IN CULTURE SUPERNATANT (C.S.) OF MONONUCLEAR CELLS (MN) AND POLYMORPHONUCLEAR NEUTROPHILS (PMN) STIMULATED WITH *S. pyogenes*

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Infection with *S. pyogenes* triggers a significant immune response with the participation of various cell types, including MN and PMN. Since both the TLR2 and the IL17 mediate optimal resistance to the infection, both variables were evaluated. MN and PMN cells were separated from peripheral blood of healthy donors, suspended in RPMI 1640 and distributed into 6 tubes for each kind of cell. Tubes 1&2 were added with RPMI (B: basal); 3&4 with live *S. pyogenes* (Ispy) and 5&6 received inactivated *S. pyogenes* (ispy). Then they were incubated for 18 hrs. at 37°C. IL17 was measured by ELISA (R&D) in c.s. of PMN and MN. TLR2 was evaluated by Flow cytometry (FACS ARIA, BD). **TLR2:** the data expressed as Mean Fluorescence Intensity, showed no significant difference between Ispy and ispy but they were significantly higher than B in both cases. **IL17 in c.s.** of MN and PMN was increased and no significant difference was found between Ispy and ispy. Therefore, stimulation with live or inactivated *S. pyogenes* increases TLR2 expression and IL17 levels in culture supernatant of MN and PMN and both parameters are positively correlated. Besides, stimulation with ispy seems to be as effective as with Ispy.

20. EVALUATION OF REGULATORY T CELLS (TREG), IL17 AND CCL18 IN MONONUCLEAR CELLS (MN) PREVIOUSLY IN VITRO STIMULATED WITH *ACTINOMYCETALES* BACTERIA IN TUBERCULOSIS PATIENTS (PTB)

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It has been demonstrated that inactivated *Actinomycetales* bacteria stimulate the effectors functions of MN and PMN. In this study it was investigated the *in vitro* MN activation through Treg cells, CCL18 and IL17 evaluation from PTB and Normal Controls (Co), for a later translation of these actions to an *in vivo* model to get a more effective immune response and therapy in PTB. 18 not treated PTB HIV (-) and Co. MN cells were separated by F-H gradient from a 25ml blood sample. In one tube with 250 µl de MN (5x10⁶ cél/ml), were incubated in RPMI 1640. In the other tubes, 5 µl of inactivated *M. tuberculosis* (Mtb) were added together with 5 µl of different inactivated *Actinomycetales* bacteria. In CD4 cells, Treg cells proportion was evaluated by Flow Cytometry. CCL18 and IL17 levels in culture supernatant of MN were determined (ELISA, R&D). The obtained data indicated that inactivated *Actinomycetales* bacteria, particularly *Tsukamurella* y *M. vaccae*, have immunomodulatory capacity inducing *in vitro* a decrease in Tregs proportion and an increase in the production of CCL18 and IL17.

21. COMPARISON OF N-ACETYL-BETA-D-GLUCOSAMINIDASE URINARY AMONG TYPE 2 DIABETIC PATIENTS WITH DIFFERENT LEVELS OF URINARY ALBUMIN EXCRETION

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The aim of this work was to compare the urinary N-acetyl-beta-D-glucosaminidase (UNAG), as a marker of renal tubular damage, among type 2 diabetic patients with different levels of urinary albumin excretion [UAE, mg/g Creatinine (Cr)] and to evaluate a relationship with renal function. 58 patients were initially categorized into three groups based on the UAE: normoalbuminuria (A, UAE<30, n=19), microalbuminuria (B, UAE=30-299, n=17) and macroalbuminuria (C, UAE>300, n=22). C group was furthermore divided into two groups: C1 (serum Cr <1.2 mg/dl, n=14) and C2 (serum Cr >1.2 mg/dl, n=8). On the first morning urines were evaluated UAE and UNAG (Units/g Cr) by immunoturbidimetric and colorimetric methods, respectively. Cr was measured by a kinetic Jaffe method. The results, presented as median (IQR), were compared with the Kruskal-Wallis test. A P value of less than 0.05 was considered statistically significant. UNAG and serum Cr values were, respectively: A=4.4 (7.7) and 0.9 (0.1), B =17.0 (13.2) and 0.9 (0.1), C1=19.6 (11.2) and 1.0 (0.5), C2=40.9 (64.0) and 2.9 (1.9). UNAG was significantly lower in A with respect to B, C1 and C2 as well as in B regarding C2 while no significant differences were found between B and C1. Serum Cr did not differ significantly among A, B and C1. We conclude that tubular alteration, showed by increased UNAG, may be already present in microalbuminuric type 2 diabetics. In macroalbuminuric patients with impaired renal function, unlike to those with preserved one, tubular damage could be worse due to a longer injury time arising from the tubulotoxicity of proteinuria.

22. COMPARISON OF TWO STAINS TO DETECT IN SPERM FORENSIC SAMPLES

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Within legal medicine sperm cytology is an important fact because of its implications in criminal law. In legal Chemistry is common to observe sperm heads, these have a distinctive morphological characteristic, considering that the forensic material is scarce and subject to unfavorable situations. Our objective was to compare two stains: Hematoxylin -Green Bright (HGB) and Papanicolaou (PAP) to identify the presence of sperm in forensic samples. 47 samples from alleged sex crimes materials were analyzed. When they were at least one complete spermatozoid, was considered positive, presumptive if only were found heads, and negative when spermatozoids were not observed. In 36 samples (76%) showed the same results by applying both stains, in HGB (36%) were presumptive results (heads only) and in PAP (34%). Statistical analysis was performed using the χ^2 test and statistically significant association was found between the results obtained in both stains ($p<0.001$), indicating that the search for spermatozoid in forensic practices, can be equally applied stained with HGB or PAP. For reasons of cost and operational simplicity we advise the application of HGB. The high frequency of forensic samples classified as presumptive, the need to persist in the search for methods to corroborate the presence of spermatozoid heads, which would be a turning point in Forensic Chemistry.

23. RELATION OF THE SPERM BIREFRINGENCE WITH THE FUNCTIONALITY OF HUMAN SPERMATOZOID

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The objective of this work was to study the relation of % sperm birefringence (SB) with parameters that evaluate the fertilizing capacity in the human spermatozoid: functionality of the membrane, chromatin maturity and nuclear DNA integrity. Semen samples from 70 men were analyzed. The sperm study according to WHO 2010 were carried out to all samples. The functionality of the sperm membrane was evaluated with the Hipoosmotic Test (HT), the condensation state of the chromatin with Blue Aniline Test (BAT), the DNA integrity using Acridine Orange Test (AOT) and the SB by means of polarized light microscopy, 40x objective. The relation % SB and functionality of the sperm membrane was studied grouping in G_{HTN} (n=46) with normal HT and G_{HTA} (n=24) with altered HT. To relate % SB cells with condensation of the chromatin, the samples were divided in G_{BATN} (n=40) with normal BAT and G_{BATA} (n=30) with modified BAT. The evaluation of % SB with sperm DNA integrity was analyzed dividing in G_{AOTN} (n=45) with normal AOT and G_{AOTA} (n=25) with abnormal. The obtained results: $G_{HTN} = 62.26 \pm 15.58$ vs $G_{HTA} = 35.34 \pm 20.39$; BAT $G_{BATN} = 64.07 \pm 15.57$ vs $G_{BATA} = 43.33 \pm 21.80$; $G_{AON} = 66 \pm 15.11$ vs $G_{AOA} = 39.90 \pm 20.05$. The t-Student Test was applied and significant statistically differences were found in %SB in each group for the three variables studied ($p<0.0001$). The evaluation of the % SB constitutes an additional tool in the analysis of the fertilizing capacity of human spermatozoid.

24. Campylobacter jejuni VERSUS ERYTHROMICYN

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Campylobacter jejuni is an important agent of bacterial enterocolitis in the world, especially in pediatric patient. Although antimicrobial therapy is not routinely indicated, in recent years it has become important to know their susceptibility given the high rate of resistance reported in the literature. Erythromycin treatment is recommended in invasive cases or to remove the condition carrier. The aim of this study was to analyze the erythromycin resistance of *Campylobacter jejuni* strains isolated from stool cultures from patients at Zona Norte Children's Hospital.

Fourteen *Campylobacter jejuni* isolates recovered from stool cultures of patients between 0 and 6 years who presented to Zona Norte Children's Hospital were studied. The minimum inhibitory concentration (MIC) to erythromycin using Oxoid MICE strips was determined. CIM was performed on 5% blood agar and microaerophilic incubating 24 hours at 42°C. Sensitivity or resistance was reported as CLSI standards.

The 14 strains studied were sensitive to erythromycin. Neither of the strains were resistant to erythromycin nor presented intermediate resistance. MIC values ranging from 0.5 ug/ml and 1.0ug/ml. No erythromycin resistance was detected. It is important to conduct surveillance of resistance to erythromycin in *Campylobacter jejuni* for their susceptibility pattern as the antimicrobial is used empirically in the treatment.

25.

DERMATOPHYTOSIS IN ZONA NORTE CHILDREN'S HOSPITALVidal ME, Diaz MS, Martinez MC, Spoletti MJ.
Bacteriology Service. Zona Norte Children's Hospital.

The aim of this study was to determine the prevalence of dermatophytes producers superficial mycoses in different clinical forms, discriminating by gender in patients 0-13 years from January 2009 to June 2013. 747 patients, 414 girls and 333 boys was attended. Flakes of skin, nails and scalp between sterile slides by scraping with a scalpel sterile disposable of the active edges of the lesion. Part of the sample was analyzed by direct microscopic examination and the other part of the sample was plated on to agar Lactrimel Saboureaud glucose and incubated for 15 days at 28°C. A total of 747 patients were served with suspected of superficial dermatophytosis in the period studied. 354 were confirmed by culture positive cases (47%) of which 207 (58.5%) were girls. Positive results were presented in the following clinical forms: tinea capitis 49% (174), tinea corporis 45% (159) and tinea unguium 6% (21). The most frequently isolated dermatophyte in tinea capitis was *Microsporum canis* (37%), tinea corporis was *Trichophyton mentagrophytes* (39%) and tinea unguium was *Trichophyton rubrum* (48%). The agreement between the mycological culture and clinical diagnosis was 47%. Possibly the empirical treatment which patients are exposed is amending the presentation of the injury and makes difficult the identification of the etiologic agent. The number of isolates was higher among women than in men. The results showed predominance of zoophilic species. This can be attributed to most of the children were cared for pets. The results are consistent with the literature.

26.

ETIOLOGY OF DIARRHEA ACUTE BACTERIALVidal ME, Martinez MC, Spoletti MJ.
Bacteriology Service. Zona Norte Children's Hospital.

The aim of this study was to determine the incidence of enteropathogenic bacteria that cause acute diarrhea in children 0 to 15 years old by relating to gender, age, seasonal variation and inflammatory reaction. Were processed by standard techniques 452 coprocultures from 21 March 2012 to 20 March 2013. The following groups for age distribution were considered: under 1 year, 1 year, 2-4 years old, 5-9 years old, 10 to 15. The inflammatory reaction was evaluated by microscopic observation and the incidence of enteropathogenic bacteria was analyzed by station. Of the total of processed stool cultures 12% (54) were positive, 54% (29) of the patients were women and 46% (25) were male. Acute diarrhea was predominant in 2-4 years and in summer. 56% (30) of the samples showed abundant leukocytes.

	Autumn	Winter	Spring	Summer
<i>S. flexneri</i>	n=3	n=2	n=5	n=18
<i>S. sonnei</i>	n=3	n=0	n=2	n=4
<i>C. jejuni</i>	n=1	n=0	n=3	n=3
<i>C. coli</i>	n=0	n=1	n=0	n=0
<i>E. coli</i> EPEC	n=1	n=1	n=0	n=1
<i>E. coli</i> O 157	n=1	n=0	n=1	n=1
<i>Salmonella</i> OSA	n=0	n=1	n=0	n=1
<i>A. hydrophyla</i>	n=0	n=0	n=0	n=1

This paper provides information on the prevalence of enteropathogenic bacteria recovered from patients with acute diarrhea seen in the Department of Bacteriology. To define the epidemiology of acute diarrhea in our hospital further studies including viruses and parasites are required.

27.

VASCULAR FLORA OF THE PROVINCE OF SANTA FE: MARTYNIACEAE, LENTIBULARIACEAE, HYDROPHYLLACEAE AND SCLEROPHYLLACEAEDi Sapio O¹, Galetti L², Oakley L², Prado D².
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The Families *Martyniaceae*, *Lentibulariaceae*, *Hydrophyllaceae* and *Sclerophyllaceae* are grouped in the Order *Tubiflorae*, in the classical system of Engler. At present they belong to three different orders: the first two in *Lamiales*, the *Hydrophyllaceae* in *Boraginales*, and *Sclerophyllaceae* in *Solanales* (according to APG-III). These families inhabit tropical and subtropical regions of both hemispheres. This contribution is an introduction to the knowledge of these families and their distribution in the province of 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 preliminary results show that the *Martyniaceae* is represented in Santa Fe by the genus *Ibicella* Van Eselt, with one species: *I. lutea* (Lindl.) Van Eselt., common in high fields across the province. The Family *Lentibulariaceae* with the genus *Utricularia* L. has three perennial aquatic species: *U. platensis* Speg., *U. foliosa* L. and *U. gibba* L., in central riparian areas. The family *Hydrophyllaceae* has three genera, in the north occurs *Hydrolea* L. with two perennial species and one variety, *H. elatior* Schott e *H. spinosa* L. var. *spinosa*; *Nama* L. with *N. jamaicense* L.; on the other side, *Phacelia* Juss. with perennial herb *P. artemisioides* Griseb., is cited only in catalogs without a supporting voucher. The family *Sclerophyllaceae* includes the genus *Sclerophyllax* Miers, with one species: *S. spinescens* Miers, annual herb distributed throughout the province. Taxonomic information, distribution map and illustrations are provided.

28.

POTENTIALLY INAPPROPRIATE ORAL ANTIDIABETIC MEDICATIONS FOR USE IN ELDERLY PATIENTSCalvin E¹, Pires M², Quaglia N², Marzi M³.
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The prescription of drugs for the treatment of elderly patients with type II diabetes mellitus should be based on strong evidence of safety. Since the last two decades the scientific community is working to determine the drugs which risk of harm exceeds the expectations of clinical benefit and, having more effective and safer alternatives, their use should be avoided on the elderly population. Lists of potentially inappropriate medications (PIM) for use in elderly people have been developed in different countries, depending on the availability of those markets. The aim of this study was to identify oral antidiabetic drugs marketed in Argentina and that the international scientific community considered potentially inappropriate to be used in old patients. An intensive literature search on electronic databases of LILACS, SciELO and Medline / PubMed of published studies between 1990 and 2012 that included lists of PIM was performed. Ten studies from eight countries were located and three oral antidiabetic drugs currently marketed in Argentina were identified, all of them sulfonylurea derivatives with a high risk of producing prolonged hypoglycemia: glibenclamide, glipizide and chlorpropamide. This study should be improved using a method that could allow to obtain information from a consensus panel of professionals from our country about the safety of these drugs when used on the elderly population.

29. QUERCETIN ACTION FROM RHEOLOGICAL ALTERATIONS PRODUCED FOR ALUMINUM (AL) IN THE HUMAN RED CELL

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In a previous work, we had observed that the cellular shape (CS), osmotic fragility (OF) and erythrocyte deformability (ED) from human red cells (hRC) incubated *in vitro* with $AlCl_3$ (Al) were modified, probably by production of the free radical that produced damage in the membrane. Others authors had observed that the Quercetin (Qc, natural antioxidant) is captured by the hRC. In this work, we study the Qc protector action from alterations in the mechanic properties produced by Al. Washed hRC were incubated as follows: I) in PBS, pH=7.4 10^7 (control); II) in $3 \mu M$ Qc solution, 10^7 (Qc); 3) in $3 \mu M$ Qc solution, 10^7 and later in $AlCl_3$ $1 \mu M$ 30^7 (Qc-Al); IV) in Al solution 30^7 (Al). In them they were determined: a) rigidity index (RI) (high RI low ED) by filtration through pores of $5 \mu M$; b) cell shape (microscopic) with morphologic index (MI) as result; c) osmotic fragility by photometry at 540 nm and we reported X_{50} (NaCl concentration which gets 50% of hemolysis) (n=14). Static: ANOVA test, $p < 0.05$ was accepted. No differences were significant in the tree variables studied between Control, Qc and Qc-Al but differ from Al. These results indicated that the previous treatment with Qc inhibited action. The mechanism proposed is that the flavonoid produced the reduction of free radicals generated from metal, and avoid that this produced changes in the membrane and alterations in the mechanic compartment of the RC in relation with ED, CS and OF.

30. THE QUERCETIN AVOIDS THE ALUMINUM EFFECT UPON ERYTHROCYTE AGGREGABILITY AND DEFORMABILITY

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Previously we showed that aluminum (Al), *in vitro*, impaired erythrocyte membrane fluidity and consequently alter their mechanical properties: decrease cell aggregating capacity and deformability. Besides, many authors have shown that quercetin is efficiently taken by red blood cells (RBC). Objective: Study if quercetin presence avoids the Al effect, preserving AE and DE. **Methodology:** washed human RBC were incubated as follows: I) in PBS, pH: 7.4 10^7 (control); II) in $3 \mu M$ Qc solution, 10^7 (Qc); III) in $3 \mu M$ Qc solution, 10^7 and later in $AlCl_3$ $1 \mu M$, 30^7 (Qc-Al); IV) in $AlCl_3$ $1 \mu M$ solution, 30^7 (Al); determining: (I) EA (by light transmission) with a T value (aggregate size) and a V value (aggregation rate) and (II) ED: through rigidity index (RI) (high RI low ED) by filtration through $5 \mu m$ pores. Statistic ANOVA test; variables presented as mean \pm SD, $p < 0,05$ was accepted. **Results:** T values: solution I: 1.86 ± 0.05 (n:42); II: 1.87 ± 0.03 (n:31); III: 1.86 ± 0.05 (n:37); IV: 1.81 ± 0.03 (n:41)***; V values: solution I: 1.33 ± 0.05 (n:42) II: 1.20 ± 0.45 (n:31) III: 1.30 ± 0.51 (n:37); IV: 0.77 ± 0.26 (n:41)**; RI values: solution I: 9.45 ± 2.48 (n:16) ; II: 9.14 ± 2.66 (n:16) ; III: 8.02 ± 1.34 (n:12); IV: 14.17 ± 0.63 (n:14)* (ANOVA test) ***: $p < 0.005$; *: $p < 0.05$. **Discussion:** The results show that previous Qc treatment inhibits membrane Al action on red blood cells preserving their aggregability and deformability.

31. THE EFFECT OF WINTER PERIOD ON THE SURVIVAL OF *Chloris gayana* Kunth

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Grama Rhodes is a megathermic forage species, expresses its aerial fitomass in the period spring-summer-autumn, and remains dormant in the winter. Using this would increase forage production, however, the winter condition affects survival of plants and productivity. The purpose of this study was to evaluate, for two winter periods, the survival of the *C. gayana* plant subjected to different cutting heights. The study was conducted in a pasture of *C. gayana* in one area of the alkali soil of the Faculty of Agricultural Sciences, Zavalla, Santa Fe. The statistical design was a randomized complete block with three replications. Each block consisted of an area of $24 m^2$. In each were demarcated 3 plots and in them we applied the following treatments: uncut biomass (T1), cut to 15 cm (T2) and 5 cm soil (T3). Were recorded temperature (T°) and rainfall (mm). Was measured after the winter period, weight of the live and dead aerial phytomass in each treatment (MV and MM, respectively), number of living tillers by manual separation and the ratio MV / MM. The dry weight of the live fitomass showed significant differences between treatments, T1 was the one who recorded the highest value, intermediate T2 value and the lowest T3. There was interaction between year * treatment. There were only differences between tillers alive. The manifestations of the species between treatments and years, showed its fragile sensitivity to low winter temperatures in the area. We conclude that the survival of *C. gayana*, is affected by decreasing the height of biomass at the start of the winter period, suggesting a short and intense grazing in the previous autumn.

32. EFFECT OF PHYSICO-CHEMICAL CONDITION OF THE SOIL ON THE INITIAL GROWTH OF FIVE YOU WILL CULTIVATE OF *Chloris gayana* KUNTH

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For his tolerance to the alkalinity the Rhodes Grass (*Chloris gayana* Kunth) is a forage with a high yield potential to be used in depressed sites of the Santa Fe Rolling Pampa. The target of the work was to evaluate the initial air and radical growth of five you will cultivate diploids of *C. gayana* in two contrasting edaphic environments. The experience was realized in Faculty of Agricultural Sciences, Zavalla. Two soils were selected: S1 Argiudol vértico and S2 typical Natracualf. On December 15, 2012 the sowing was realized of you will cultivate Pioneer, Katambora, Top Cut, Cut and Reclaimer. In both edaphic environments a design was applied in complete blocks at random, with three repetitions. At 45 days of realized the sowing, 15 plants were extracted with their roots by every experimental unit. Aerial phytomass and radical were measured and length of the roots. Only there was interaction between soil: to cultivate for the variable radical length. To cultivate Pioneer in S1 presented the major length and dry weight of roots. In every soil, Reclaimer presented the highest values in aerial phytomass. The obtained results demonstrate that the condition of S2, significantly affects the aerial mass weight and length of roots in all cultivars. It stands out that, in these first stages of the growth, Reclaimer presented more than 20% in the aerial phytomass than the other cultivars, possibly due to the pressure of selection genotypic that he presents to cultivate. We conclude that the choice of variety to plant is an important factor, when you consider that the production of *C. gayana* is directly related to the aerial and radical growth of plants to be installed in these complex edaphic environments.

33. BACTERIOLOGICAL QUALITY OF CRAFT CREAM LIQUORS OF BUENOSAIRES PROVINCE

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The aim of this work was to perform a preliminary study about the potential presence of bacteria in craft cream liquors to determine its microbiological quality. Four liquors were analyzed: lemon cream at the Sorrentina (A), lemon cream (B), Irish cream (C) and sweet milk (D). From dilutions, 1 ml was taken for counts. Spread on surface was carried out (0.1ml) by triplicate, with Baird Parker agar, Violet Red Bile Glucose agar, Violet Red Bile Neutral agar and MRS-lactobacilli agar. subsequently analyzed by biochemical tests. The average counts obtained for aerobic mesophiles bacteria (BAM) were: A sample: 9,9x10³; B: 3,5x10³; C: 3,24x10³ and D: 3,41x10³ ufc/ml. *Staphylococcus* spp counts were: for C sample C: 2,0 x10³ and for D: 3,3x10³ ufc/ml. *Micrococcus* spp. counts were, for C: 5,6x10² and for D: 4,2x10² ufc/ml. The *Lactobacillus* spp. counts were for A: 3,2x10³; B: 4,1x10³, C: 2,3x10³ and D: 2,45x10³ ufc/ml. *Enterobacter*, coliforms, *E. coli* and *Staphylococcus aureus* were not detected. The fact that in all samples, BAM, and different genus were found indicate that the Good Manufacture Practices were not well implemented. The fact that in all samples aerobic mesophilic bacteria and different genus were found indicate that the Good Manufacture Practices were not well implemented. This is significantly important since these liquors contain sucrose and cream. There are not regulations in Argentina to these kind of beverages.

34. BONE MARROW BIOPSIES: REVIEW IN THE DEPARTMENT OF PATHOLOGY, CENTENARIO PROVINCIAL HOSPITAL

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The aim of this paper is to determine the frequency of hemolymphoid pathology and to characterise specific diagnostic entities. An epidemiologic, observational, retrospective and descriptive study was carried out, based on bone marrow biopsies' data from adult population of the Centenario Provincial Hospital, between January 2009 and June 2013. Out of a total number of 16,814 revised biopsies, 312 (1.85%) were bone marrow (BM) biopsies. 4 (1.28%) were insufficient for diagnosis; out of the 308 remaining patients, 121 (39.29%) were females and 187 (60.71%) were males. Ages ranged between 16 and 85 years. 204 (66.23%) were non-neoplastic; 74 (24.03%) were normal BM; 59 (19.15%) were hyperplasias; 32 (10.39%) were hypoplasia/aplasia; 32 (10.39%) were HIV-related pathologies; 25 (8.11%) were dyshemopoietic changes and 7 (2.27%) showed infections –TBC 3 cases, histoplasmosis 4 cases; Plasmocytosis 5 (1.62%) and renal osteodystrophy 2 (0.65%). Neoplastic pathology included 104 cases (33.77%): 32 (10.39%) lymphoproliferative syndromes (LPS), 27 (8.77%) myeloproliferative syndromes, 17 (5.52%) multiple myeloma, 14 (4.55%) acute leukemias, 9 (2.92%) myelodysplastic syndromes, 4 (1.30%) metastases and 1 (0.32%) mastocytosis. Normal BM represented the higher frequency: 74 cases (24.02%); of these, half of the cases (37) corresponded to hematologic disease staging.

35. HISTOLOGIC CONFIRMATION OF LESIONS DIAGNOSED AS HYDATID CYSTS IN HEART OF CATTLE IN ABBATOIR. DESCRIPTIVE STUDY

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The hydatid cyst (QH) is the larval form of *Echinococcus granulosus*. Bovines (*Bos taurus*) are an intermediate host of the parasite cycle. In this species, the heart can be a location for a QH. The objective was to confirm by histological studies those pathologies diagnosed as QH in the abattoir. Twenty QH-suspected cattle hearts were studied. Anatomic-pathologic and optical microscopic observations were performed to identify parasitic structures. When diagnosis was not possible, histological studies were performed. Samples were fixed with formalin 10%, embedded in paraffin and sliced (5 microns). Stains used were hematoxylin-eosin, periodic acid schiff (PAS) and Ziehl-Neelsen. In 50% (10/20) of the samples, typical QH structures were observed. In three hearts (15%), abscessed QH were identified. In one case (5%), calcified QH were observed. Lesions not related with QH were: Cysticercus 5% (1/20), chronic vegetative endocarditis 10% (2/20) and lymphosarcoma 5% (1/20). Histopathological studies contribute to accurate diagnosis, allowing a better estimation of the true prevalence.

36. EVALUATION OF EXTRACELLULAR ENZYME ACTIVITY IN YEAST FROM MUCOSAL LOCATION

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Production of hydrolytic enzymes can be associated with greater invasiveness and infectivity in infections due to yeasts. The aim of this study was to evaluate the activity of different enzymes produced by yeast recovered from mucosal sites. We studied 51 of *Candida albicans*, 11 *C. parapsilosis*, 6 *C. tropicalis*, 3 of each *C. dubliniensis* and *C. krusei*, from oral mucosa. Enzymes activity was assessed using apiZYM® kit, which studies activity of 19 enzymes. Fisher's exact test was used to evaluate association between enzymes activity and species. Activities of α -fucosidase, α -galactosidase, α -chymotrypsin, β -glucuronidase and trypsin were negative in all studied strains. Acid phosphatase, α and β -glucosidase, β -galactosidase, α -mannosidase, cystine arylamidase, lipase, alkaline phosphatase, leucine arylamidase, N-acetyl β -glucosaminidase, Naphthol-AF-Bi-phosphohydrolase, valine arylamidase, lipase esterase and esterase were detected with various frequencies in different species. It was observed no association between enzyme activity and recovered species for: α -glucosidase ($p > 0.70$), β -galactosidase ($p > 0.70$), β -glucosidase ($p > 0.50$), leucine arylamidase ($p > 0.20$), N-acetyl β -glucosaminidase ($p > 0.60$), Bi-AF-Naphthol-phosphohydrolase ($p > 0.20$), valine arylamidase ($p > 0.20$), esterase lipase ($p > 0.40$), esterase ($p > 0.10$), acid phosphatase ($p > 0.30$), and α -mannosidase ($p > 0.80$). There is marginally significant association between cystine arylamidase activity and isolated species ($p = 0.06$). Association is very significant for lipase activity ($p < 0.005$), and alkaline phosphatase ($p < 0.005$). Knowledge about production of hydrolytic enzymes in yeasts is very important when antifungal prophylaxis or treatment is needed, because these virulence factors may result in increased invasiveness and decreased efficacy of treatments.

- 37. CATTLE HYDATIDOSIS IN CASEROS DEPARTAMENT AS A CAUSE OF DECOMMISSION IN ABATTOIRS**
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- 39. EVALUATION OF HALOTHANE SEDOANALGESIA IN CBI, CBI/L AND CBI+ 200 DAYS OLD MALE MICE**
Harvey G¹, Sagardoy M¹, Bonfiatti J¹, Consiglio F¹, Di Masso R^{2,3}, Colucci D¹, Elena G¹, Puig N^{1,3}.
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Hydatidosis is a zoonotic parasitic disease caused by *Echinococcus granulosus* (Batsch, 1786). In order to establish the importance of Hydatidosis among decommission causes in abattoirs, information obtained December 2009 and January 2011, from the local National Health Service and Food Quality (SENASA), based in Casilda, Caseros Department, Santa Fe, Argentina, was analyzed. About 2,268 animals presented lesions that determined decommission. Hydatidosis was the main cause with a total of 1,058 affected animals, representing a 46.65% of decommissioned animals. Other diagnosed diseases, expressed as percentage (absolute number), were: Actinobacillosis 1.32% (30); Actinomycosis 2.47% (56); Cysticercosis 0.26% (6); Distomatosis (Fasciolosis) 6.52% (148); Esofagostomosis 1.32 (30); purulent infections 30.7% (696); septicemia 0.04 (1); Tuberculosis 10.1% (229); other diseases 0.62% (14). Records of decommissioned organs are a valuable source of information to be used in the development of disease control programs.

Unconsciousness and blockade of somatic motor response to noxious stimulation are the most important goals of general anesthesia. We compared the effect of halothane anesthesia in 200 days' old male mice selected for different conformation. Halothane 2% was vaporized at atmospheric pressure in 100% oxygen, at 6 l/min for 40 min. During and after halothane anesthesia, large body and low weight (CBI/L, IGE n=24, 33g (25-35)), mice, large body and high weight (CBI+, IGE n=18, 64 g (57-76)) mice and CBI (II, n=18, 48g (38-53)) were monitored. Variables were registered in a specially designed anesthetic chart and complementary physiological information was also recorded. Latency to achieve unconsciousness and blockade of motor response to a noxious stimulus was registered together with the period needed to recover from these stages. Sedoanalgesia was achieved when both end points were obtained. Data were analyzed by the Mann-Whitney U test. P<0.05 was considered significant. The anesthetic schedule was adequate for providing sedoanalgesia to CBI and CBI/L, but not for CBI+ mice, the group with the highest weight and fat content. The lipophilic properties of halothane, highly soluble in fat, and the increased fat tissue present in CBI+ may account for the differences registered in the present work.

- 38. PHENOTYPIC AND MOLECULAR CHARACTERIZATION OF A TOMATO (*Solanum lycopersicum*) SECOND CYCLE HYBRID'S BACKCROSS AND QTLs DETECTION**
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AFLP markers allow the characterization of different genotypes and the detection of QTLs. The goals of this research were to characterize thirty eight backcross plants obtained from the second cycle hybrid (SCH) (ToUNR18xToUNR1) using 6 AFLP primer combinations and ten quantitative trait of agronomic importance: weight, diameter, height (H), soluble solids (SS), acidity, colour, pH, shape (S), firmness and post-harvest life, and to detect QTLs. The normality of each trait was tested using the Shapiro-Wilk's test. The χ^2 -test was used to verify the 1:1 Mendelian segregation of each polymorphic band and the 1:1:1 segregation of each pair of fragments segregating 1:1 to prove the hypothesis of independence. Associations among the polymorphic fragments showing the expected segregation and the phenotypic traits were detected by ANOVA single point analysis. Amplifications revealed a total of 111 fragments, of which 67 (60.36%) were polymorphic. Seven fragments showed a *de novo* performance. Nine (60%) fragments showed association with at least one of the phenotypic traits (SS, H and S). Ten pairs of fragments associated to one character showed an independent segregation. Only one pair associated with shape showed interaction, involving epistasis. Three fragments showed pleiotropic effects (SS and S; SS, H and S; H and S).

- 40. ABH ANTIGEN STUDY IN PATIENTS WITH BREAST CANCER BY TWO IMMUNOHISTOCHEMISTRY TECHNIQUE**
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The aim of this work was to investigate ABH expression on tissue sections of patients with presumptive diagnosis of breast cancer by two immunohistochemical techniques. Tissue samples (n=27) were derived from the Pathology Department of the Hospital Centennial. We used an immunohistochemical technique, NovoLink™ Polymer Detection Systems, with monoclonal antibody diluted appropriately, valid for paraffin-embedded tissues. Immunostaining was based on the use of a high molecular weight polymer (dextran) to which is conjugated covalently a large number of enzyme molecules and secondary antibody. Also the samples were treated by immunoadherence reaction. The sections were incubated with monoclonal anti-A, anti-B or anti-H lectin, and then with isogroup erythrocytes suspensions. The sections in both techniques were studied by optical microscopy and quantified by crosses (1 to 4). With the first technique, the sections show ABH antigen conservation in 5 patients according to the previous benign diagnosis. Those anatomopathological diagnosis with breast cancer (n=22) shows a partial deletion in 9 of the samples studied, while in 13 of the rest a total deletion of antigenic expression was observed. Breast cancer tissues analyzed by the immunoadherence assay show a total deletion of ABH expression in 17 histological slides, and partial deletion in 5 of them. In those samples without breast cancer diagnosis, ABH antigen system (n=5) was retained. The results of our study show that the PDE technique could distinguish between total and partial loss of these antigen.

41. ABO PHENOTYPING OF INBRED MOUSE LINES SELECTED BY BODY CONFORMATION

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The possibility of having genetically defined lines of rodents has been one of the major advances in the science of laboratory animals. The inbred lines are the prototype of genetically standardized lines, because their genetic makeup is fixed in almost final form. The aim of this study was to determine the presence of ABO like structures in different lines of the CBi stock. We worked with EDTA anticoagulated whole blood from mice of each line (n = 32). Hemagglutination technique was applied using three batches of human monoclonal antibodies anti-A and anti-B and *Ulex europaeus* lectin (anti-H activity). Determination of ABO antibodies like structures was performed with serum / plasma from the lines under study and globular panel A, B and O. Positive controls for antigen A and B were used. Simultaneously, the presence of hemolytic antibodies was analyzed by incubating the respective cells with serum at 37°C for 15 min. The investigation of the ABH antigens by direct test was negative in all tested samples as well as no binding antibodies and ABO hemolytic like. The results of the studies conducted so far on these mice lines lead to the conclusion that they do not differ in the carbohydrate structures present in the human ABO system.

42. EFFECT OF C AND E EPITOPES ON ERYTHROCYTE D ANTIGEN EXPRESSION

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The identification and quantification of the erythrocyte D antigen epitopes by sensitive techniques would allow the characterization of the clinical implications of variant D phenotypes. The aim of this work was to analyze the influence of the C and E epitopes on the D antigen expression by flow cytometry. We determined the Rh complete phenotype on erythrocyte suspensions using monoclonal anti-D, -C, -c, -E and -e reagents. Indirect fluorescent staining was done on D positive samples (n=34) and D negative controls using an IgG anti-D and anti-human IgG labeled with Alexa 488. 100000 events were analyzed for each sample. The Mann-Whitney test showed that the median (interquartile range) for the median of the fluorescence intensity (FI) associated with the D antigen expression were: for samples carrying C (n=26): 13605.0 (12196.0) and for cc samples (n=8): 19088.5 (15290.0). For samples expressing the E epitope (n=17): 19379.0 (13010.0) and for ee samples (n=17): 12736.0 (5327.0). The average value obtained was significantly higher in samples lacking the C antigen (p<0.05) and in samples expressing the E epitope (p<0.005). The results obtained suggest that the C antigen has a negative effect on the RhD protein expression. The decrease in the D antigen expression found in samples carrying the C antigen may be the result of a privileged affinity of the RhCe variant for RhAG, placing the RhD protein in a detrimental position.

43. EVALUATION OF EXPRESSION OF BAND 3 AND GLYCOPHORIN A PROTEIN DURING AGING ERYTHROCYTE

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The aim of this study was to evaluate the level of expression of the 2 major proteins of red blood cells (RBC): Band 3 (CD233) and glycophorin A (CD235a) by flow cytometry (FCM) in whole blood samples. RBC was labeled with anti-band 3 antibody and after being washed with phosphate buffered saline solution were labeled with APC-conjugated goat anti-mouse antibody. After being washed, the cells were resuspended in FACSFlow. For the evaluation of the protein Glycophorin A, 50 uL of RBC were incubated with CD235a labeled fluorescein isothiocyanate (FITC). After 30 min, were washed and resuspended in diluent FACSFlow. 100.000 events were analyzed for each sample. Dot-plot analysis based on the FSC (cell size) versus SSC (cell density) parameters shows two RBCs populations of different sizes and density. Given that FSC represents cell size and SSC internal cellular complexity, we assume that the population of senescent RBC (SeRBC) is located in the < FSC and > SSC. The median values of mean fluorescence intensity (MFI) of CD233 to SeRBC (31016.5 ± 4198.0) are significantly lower than for young RBC (YRBC) (34070.0 ± 5878.0) (p < 0.0001) and median values of CD235a MFI for SeRBC are significantly lower (7516.0 ± 4806.5) than for YRBC (8420.5 ± 5307.0) (p < 0.001). The results show significant differences in the level of expression of both proteins evaluated between SeRBC and YRBC by FCM. These findings confirm that RBC populations of varying ages can be analyzed by this method without performing a physical separation of the cells.

44. INVESTIGATION OF MOLECULAR POLYMNORPHISMS INVARIANT D PHENOTYPES

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Variant D phenotypes are characterized by an aberrant expression of the D antigen and are the result of numerous *RHD* different alleles. D variant patients are currently considered D negative for transfusion, however not all D variants are prone to immunization. The aim of this work was to analyze the molecular bases responsible for D variant phenotype. We studied 116 blood samples from Rosario (n=44), Tucumán (n=39), La Plata (n= 14) and Córdoba (n=19). The Rh complete phenotype was performed by hemmagglutination. The *RHD* allele was detected by a PCR multiplex strategy. *RHD* positive samples were studied by PCR SSP to analyze the presence of *weak D* and *DVII* alleles and sequencing. The molecular studies showed that 54,31% of all samples carried *weak D type 1* to 3 alleles. In Córdoba, La Plata and Rosario those alleles represented more than 50%. In Tucumán the frequency was lower (28,20%) but a major allele variability was observed. In Córdoba and Tucumán *weak D type 4* allele was detected in a higher rate. The frequency of *weak D type 1* to 3 alleles, attributed to Caucasian Europeans, indicate a major contribution of this ethnicity to individuals from the central region of Argentina. The frequency of the *weak D type 4* allele, characteristic of Africans, in Tucumán and Córdoba suggests the Sub-Saharan Africa contribution to this population. The allelic variability in Tucumán could be explained by the Amerindian contribution. The detection of *weak D type 1* to 3 alleles will allow a better management of D negative units in blood banks.

45. MOLECULAR CHARACTERIZATION OF TWO ALLELIC VARIANTS OF THE RHD GENE

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Numerous alleles of the *RHD* gene are responsible for an aberrant expression of the D antigen (D variants) or a complete lack of D expression (null variants). The presence of null alleles in the *RHD* locus is responsible for giving not reliable results in *RHD* genotyping strategies. The aim of this work was to characterize at the molecular level two allelic variants of the *RHD* gene. One blood sample from a patient (P1) who presented a weak expression of D antigen and one blood sample from a RhD negative patient (P2) carrying a *RHD* allele were studied. The the Rh phenotype was determined with monoclonal antibodies. The presence of *RHD* gene was studied by a PCR multiplex strategy. In P1 the presence of *weak D type 1 to 4* and *DVII* alleles was analyzed. In both samples the 10 exons of the *RHD* gene were amplified by PCR-SSP techniques. P2 sample was sequenced. In P1 exons 7, 8 and 9 did not amplify suggesting an hybrid allele *RHD(1-6)-CE(7-9)-D(10)*. The sequencing in P2 revealed polymorphisms associated to *RHDØ* allele. However, this allele was found in r'r phenotype. The molecular study of the *RH* locus allows a better characterization of D variant and D negative phenotypes and the development of reliable DNA typing strategies for prenatal *RHD* genotyping.

46. STUDY OF THE ASSOCIATION BETWEEN HLA-DRB1 ALLELES AND FIBROSIS STAGE IN PATIENTS WITH HEPATITIS C

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Infection with Hepatitis C (HC) is a health problem that affects more than 100 million people worldwide and evolves to chronicity in 70-80% of cases. The chronic stage of the disease is usually asymptomatic and extends between 20 and 30 years. It has been observed that only some infected patients develop complications arising from the HC persistent virus (HCV). Liver fibrosis is the main complication of this condition and its final evolution, cirrhosis, responsible for morbidity and mortality liver. Fibrosis is the result of the biological response to chronic liver injury. The rate of progression of it has great interpersonal variability, so their knowledge is critical in assessing the prognosis and the need for treatment. The difference in the stages of fibrosis observed in these patients may be related to some genetic characteristics of the host. The aim of this study was to determine the relationship between *HLA-DRB1* alleles and the stage of liver fibrosis. The study included 38 patients diagnosed with HC. Molecular typing of *HLA-DRB1* alleles was performed using sequence-specific oligonucleotide (PCR-SSP). Regarding the assessment of liver fibrosis, 24 patients (63%) had low-stage (stage 0: 8 patients, stage 1: 16 patients) and 14 patients. (37%) higher stages (stage 2: 6 patients, stage 3: 7 patients, stage 4: 1 patient). The results obtained in this study indicated that marginal association between the presence of *HLA-DRB1* typed and the degree of fibrosis ($p < 0.10$). Knowledge of the influence of the HLA system infection HCV will allow a better understanding of the pathogenic mechanisms.

47. EMERGENCE OF VIM-2-PRODUCING Pseudomonas putida IN ROSARIO HOSPITALS. CLONAL DISSEMINATION OR HORIZONTAL TRANSFER OF THE bla_{VIM-2} GENE?

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Pseudomonas putida (*Ppu*) strains containing acquired metallo-β-lactamases (MβL) are being increasingly reported. MβLs genes are embedded in different genetic platforms and disseminated by horizontal gene transfer (HGT). We analyzed the genetic relationships of VIM-2-producing *Ppu* and the genetic context of the *bla_{VIM-2}* genes to uncover whether these genes are spread by clonal *Ppu* dissemination or horizontal gene transfer. Seven *Ppu* clinical isolates (2008-2013) obtained from 4 Rosario hospitals (a-d) were studied by DO-PCR fingerprinting, and the association of *bla_{VIM-2}* to class 1 integrons was analyzed by PCR and sequencing analyses. Transformation and conjugation assays were also used to evaluate plasmid transfer. Five different clones were detected among the 7 *Ppu* isolates (3 showing pattern A, and the others displaying patterns B-E). Notably, clone A persisted from 2009 to 2013 in the same hospital (a) suggesting the existence of a reservoir. Genetic assays revealed that *bla_{VIM-2}* is associated to an unusual integron inserted in a complete transposition module, (InT7633), which was itself carried into conjugative plasmids in *Ppu* clones A, C and D. This suggests that plasmid dissemination is involved in *bla_{VIM-2}* spread. Also, chromosomal location of InT7633 was observed in clones A, B and E. The overall results suggest: i) inter-hospital dissemination of clone A; ii) *bla_{VIM-2}* gene is disseminated among different *Ppu* clones due to the combination of InT7633 transposition and plasmid conjugation.

48. DESCRIPTIVE STUDY: LEVEL EDUCATION, CONSUMPTION ADHESIVE SWEETS AND ORAL HYGIENE IN PATIENTS OF ROSARIO CITY

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Dental loss for caries and periodontal disease are related to level of knowledge emerging for the family, school and dentists besides to decrease sugary adhesive food consumption and to apply habits oral hygiene. Caries is a multifactorial infectious diseases dependent of the interactions between hard dental tissues, metabolic products of diet and biochemical in the bacterial plaque. These, in a capable hostess and the interaction time between the same, producing a progressive destruction of dental piece. The caries not treated evolutions with a gradual demineralization of the surface coming to in direction towards his total destruction. Periodontal disease appears when bacteria adhered on dental surface are deepened towards the rut gingival inflaming the gum; when have not controlled, originated mobility and later loss. Our aim was to verify the relation between level of formal education, consumption of sugary adhesive food and application of the habit of dental brushed. A standardized interrogatory were applied: age, sex, educational level, consumption adhesive food and brushed. Total persons of 15- 45 years old (372), males (123) and women 249). Level educational: illiterate persons 3%, incomplete primary 19%, primary complete 35%, secondary 34% tertiary 10% not always in complete form. Consumption sugary adhesive food: 84%. Dental brushed 93%. Level formal education, facilitator to understand relation between consumption of sugary adhesive food and practice of dental brushed determining the application of habits by to oral health. The consumption of sugary adhesive food is very extended in our population emerging a slightly healthy conduct though the brushed habits is performed by the majority.

49. ERYTHROCYTE DEFORMABILITY, LIPID PEROXIDATION, ERYTHROCYTE MEMBRANE LIPID FLUIDITY IN HYPERTENSIVE PATIENTS

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The aim of the present work was to study the correlation of erythrocyte deformability (ED), lipid peroxidation and erythrocyte membrane lipid fluidity in hypertensive patients and the comparison with healthy control. Erythrocyte deformability was measured by the filtration of erythrocytes and estimated using its inverse: the rigidity index (RI). Lipid fluidity was assayed by fluorescence polarization expressed as anisotropy (r_A) inversely related to fluidity. Membrane lipid peroxidation was measured by TBARS and results were expressed as malonyldialdehyde (nmolMDA/ml) of packed erythrocytes. Comparisons were performed by Student's *t* Test for unpaired data and correlation by Pearson product moment test. Results: Hypertensive patients yielded higher significant values regarding control group: 1) MDAnmol/ml packed erythrocytes 3.99 ± 1.04 vs. 2.95 ± 0.61 $p < 0.01$. 2) IR 11.92 ± 4.19 vs. 7.66 ± 1.06 $p < 0.0001$. 3) r_A 0.17 ± 0.02 vs. 0.16 ± 0.03 $p < 0.002$. There was also a significant correlation in hypertensive patients regarding r_A in function of MDAnmol/ml ($r = 0.45$ $p < 0.03$), as well as r_A and IR ($r = 0.54$ $p < 0.002$). Higher values of erythrocyte membrane lipid peroxidation could be due to a decrease in capillary perfusion observed in hypertensive patients generating free oxygen radicals that might produce erythrocyte membrane components polymerization provoking a loss of membrane lipid fluidity and of erythrocyte deformability.

50. IMPACT OF DIFFERENT HANDLINGS AT RETAILER LEVEL ON LETTUCE (*Lactuca sativa* L.) POST-HARVEST LOSSES, IN TWO TIMES OF THE YEAR

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Practices that minimize respiration, transpiration and mechanical damage would increase their shelf life. The objective was to evaluate lettuce post-harvest handlings during retail distribution, in autumn and summer. 2 factors with 2 levels each were analyzed: 1) Storage: cold room (3.4°C, 97% RH) and non-refrigerated (13°C, 81% RH in autumn and 19.5°C, 87.4% HR in summer); 2) Hydration: with and without immersion in chlorinated water. Variables (in %): weight loss by discard (broken, dehydrated, diseased leaves, with rots, and browning base stem) loss or gain of weight by water (because of evaporation, transpiration, free water on leaves) and total losses. The experimental unit were 5 plants with four replicates. A model of repeated measurements over time with MIXED procedure of SAS was used. Discard losses were lower in both seasons for the cold room. In autumn, hydration produced no significant differences, being lower in the non-refrigerated environment. In summer, the hydration significantly increased losses (15.6% non-hydrated and 100% hydrated). The loss of water weight in autumn was lower when hydrated in the non-refrigerated environment. In summer, cold room, produced a % of weight loss significantly lower (-4.25%) compared with the natural environment (3.3%). When it was not cooled, the water weight loss was lower if it was hydrated. Total losses in autumn and summer, had a very similar behavior to those produced by discarding. In both seasons, cold room storage reduced the total losses and allowed extending marketing period. Hydration decreased the losses in the non-refrigerated environment in autumn, with the opposite trend in the summer.

51. RETROSPECTIVE STUDY ON SURVIVAL AND VIABILITY OF PUPPIES BORN IN DYSTOCIC PARTURITIONS AFTER CAESAREAN SECTION

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Dystocia: is the parturition with manual intervention of a doctor as a consequence of a difficulty in delivering naturally or eutocically. Dystocia not treated conveniently causes fetuses death or unviable newborns. A study on 2,133 parturitions of various breeds and ages of dogs from Rosario city was carried out. In the studied cases, 598 were dystocic and Caesarean sections were performed. The aim of this study was to determine the rate of puppies born alive after dystocic parturitions treated with Caesarean sectioning. Parturition and peri-parturition (48hs post parturition) were considered for the evaluation of this study. Chi square (X^2) was used. The studied bitches had a full health plan. In all bitches an ecography was performed on day 58 of gestation followed by daily ecographies to monitor fetus viability. At fetus stress detection (< 170 cardiac beats per minute and absence of imminent partum) Caesarean section was performed. A total of 2,815 puppies were born, out of which 2,289 (81.5%) were alive and viable, 381 (13.5%) stillborn and 145 (5%) with various congenital defects. If the percentage of puppies with perinatal mortality due to dystocic parturitions and born through Caesarean section (13%) is compared with perinatal mortality of the total population studied, 12% (1,203) over 10,029 puppies born. It can be concluded that the ecographic follow-up of the gestation allows for an early dystocia detection, as its appropriate treatment, rendering a viable puppy percentage that does not significantly differ from the percentage of puppies born alive and viable of the total of eutocic and dystocic parturitions studied (2,133).

52. ANALYSIS OF EPIDIDYMAL SPERM COLLECTION IN CHINCHILLA (*Chinchilla lanigera*). EFFECT OF PHOTOPERIOD

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In commercial production of chinchilla, breeding is polygamous (families of six females and one male) mode that highlights the importance of the male. Sperm quality analysis of captive animals subject to natural photoperiod, suggests that they are fit to breed all year round. However, there is no information about controlled photoperiod. Objective: to evaluate the epididymal sperm quality of chinchilla males under two regimes of artificial lighting. A photoperiodic control consisted in a natural light replacement by electric light (36W fluorescent tubes, incident luminous intensity of 25-250 lux and color temperature more than 5000K), 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. Ten healthy mature males were divided into two groups (n=5). Group I (G1) assessed at the end of April with 13:30 light/day and Group II (GII) at the end of June with 10:30 light/day. Sperm retrieval was performed using the epididymal recovery technique. Parameters analyzed: motility [(1) %, (2) grade], (3) Vitality, (4) osmotic resistance, (5) total sperm ($\times 10^{11}$), (6) morphology, (7) % normal acrosomes. Results (median, interquartile range): (1) G1: 85(80/90), GII: 85(82/90); (2) G1: 4(4/4), GII: 4(3/4); (3) G1: 84(81/89), GII: 81(77/86); (4) G1: 72(61/78), GII: 79.5(72/85); (5) G1: 3(2.6/4.1), GII: 3.8(3/4.8); (6) G1: 87(74/91), GII: 93(89/96); (7) G1: 89(82/89), GII: 91(88/93). The sperm quality was optimal in both groups. The effect of day length at the time of sample collection (U test of Mann-Whitney) was statistically significant ($P < 0.05$) for morphology (6), which corroborate that males are competent to reproduce continuously, even under artificial photoperiod conditions established in this work.

53. DESCRIPTIVE STUDY: SCALE TECHNIQUE MODIFIED IN ORDER TO REVEAL HUMAN FABRICS, THEIR UTILITY IN THE NORMAL ANATOMY

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In the teaching of Anatomy, in order to consent and show deep structures it is necessary retire those that they are more superficialities. Motivated by finding new technical that they allow us to show anatomical elements without damaging another and in turn achieve the conservation of the pieces, we took contact with the Scale technique A2, developed in the Riken Institute of Tokyo, Japan. They were carried out adaptations to technical as for the fixation of the tissue, the pH of the used means and the times of required incubation. They were used: 5 human fetuses, numbered according to their size and gestational age, previous formalized. They were tried with the Scale technique A2, compound for: urea 4M, glycerol to the 10%, Newt X100 to the 0,1%; which was modified miliQ water and paraformaldehyde for distilled water and formal respectively and the omission of a substance buffer (PBS, tampon saline phosphate) and of a fixer of knitting (OTC Sakura). They are incubated to ambient temperature in the solution to several times according to the volumes of the fetuses; once produced the phenomenon, it conserve you them in glycerin to the 100%. The Scale technique A2 modified allowed generating five useful fetuses for the visualization of anatomical deep structures in the surface. The fetal coats became transparent in the 100% of the samples. So they were visualized the fetal liver and the vascular tree, the first in the 100% of the fetuses, while the second visible become visible in the 60% corresponding fetuses of adult size. The solution was effective in order to develop transparencies in certain fabrics and allow visualizing organs and/ or tissues that are under.

54. CHEMICAL AND BIOLOGICAL ANALYSIS OF DRINKING WATER SAMPLES OF THE RURAL AREA OF ARROYO SECO CITY, SANTA FE PROVINCE

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The *Allium* test is one of the bioassays mostly used in order to detect genotoxicity substances in water. Three samples of the rural area of Arroyo Seco (A.S.) have been analyzed using the *Allium* test and basic chemical analysis. The analysis of pH, totally solid dissolved, Cl⁻; nitrites, NH₃, total hardness (CaCO₃), CO₃²⁻, HCO₃⁻ and sulphates alkalinity gave lower values than the upper limit allowed by the Argentinian Food Code (CAA). The arsenic values (Av) have been almost constant doubling the one allowed by the CAA. Phyto and genotoxicity have been tested with the *Allium* test, exposing the selected yellow onion bulbs to increasing doses of the samples being tested: 100, 50, 20, 5, 1 % V/V. Negative control: commercial mineral water. Positive control: K₂Cr₂O₇ 1 ppm. Length and morphology of the roots have been evaluated as macroscopic parameters and mitotic index (MI) as microscopic parameter. Neither an influence have been observed over the MI nor over the roots length although there have been chromosomal aberrations (CA) such as C-mitosis and errant chromosomes in the most concentrated samples, which could be attributed to the content of Av. Conclusion: although the A.S. concentration influence have not been noticed over the macro and microscopic indexes in *Allium* test, the presence of CA and superior values recommended by the CAA for Nitrates and Av suggests that such water samples can be risky to it regular consumption.

55. PHYTO AND GENOTOXIC STUDY OF THE 4-NITRO-O-PHENYLENEDIAMINE THROUGH THE ALLIUM TEST. PROPOSED LIKE POSSIBLE POSITIVE CONTROL FOR THE ALLIUM TEST

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The yellow onion (*Allium L* strain) is considered to be a standard organism for quick tests, since there is a high correlation with tests carried out with mammals and an enzymatic system which allows for a promutagenic test. For some time, this test has been carried out using potassium dichromate and sodium azide as positive controls. However, there is not a considerable quantity of chromosomal aberration (CA). The objective of this work was to test the 4-nitro-o-phenylenediamine (4NOPDA), which is one of the diagnostic mutagen of the TA98 *Salmonella typhimurium* strain in the Ames' test. The bulbs have been exposed to increasing 4-NOPDA doses (seven bulbs each dose). The following have been analyzed: mother solution, dilutions (2:3, 1:2, 1:10, 1:75) negative control: mineral water, positive control: potassium dichromate 1ppm. Statistical studies have been put into practice to compare the data with the respective negative control. It has been observed a significant increase in MI caused by metaphases, a decrease in the roots length and presence of hooks, and CA in mother solution and dilution 2:3. Conclusion: 4-NOPDA turns out to be a positive control adequate for *Allium* test in estimated concentrations of 30 mg/L.

56. TEMPOROMANDIBULAR JOINT: FETAL ANATOMICAL STUDY OF ITS DEVELOPMENT

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The area in which the craneomandibular connection occurs is called temporomandibular joint (TMJ). The objectives of this study were to analyze the anatomical components of the fetal TMJ and assess changes that occurs through the same gestational development. We dissected 13 TMJ fetuses whose gestational age ranged between 15 and 40 weeks of both sexes. In each dissections were evaluated: joint capsule and interarticular meniscus presence, joint cavities presence and characteristics of temporal mandibular joint surfaces. It was observed, after 15 weeks of gestation, the joint capsule and articular disc became visible, the last one with laminar aspect. Starting this week the superior articular cavity was observed, while the bottom articular cavity was visualized since week 24. In relation to the articular's temporal surface, in most fetuses less than 24 weeks the configuration was flat, after that week begins to curved til getting a concave shape, and articular tubercle adopts a convex shape. About the mandibular condyle before the 24 week, was characterized as flat and after that week began to accentuate its convexity. There were few difficulties accessing to the region when gestational age fetus were lower. Since the 15 week, the basic components of the joint were observed such as the articular capsule, meniscus and articular joint surfaces. Not individualizing TMJ's ligaments. As gestational age advanced, we detect an increase in meniscus thickness, while articular surfaces evolved to acquire a concave appearance. About the joint cavities, were identified since the 18 week.

57. IDENTIFICATION OF FLEA SPECIES IN DIFFERENT CANINE POPULATIONS

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Ctenocephalides felis is the most frequent flea species found in the central area of the country parasitizing dogs and cats. The aim was identify flea species in different canine populations. Seventy five dogs were studied: 25 dogs from a kennel of Isla Verde, Córdoba, 20 dogs from a dog breed of Roldan, Santa Fe and 20 dogs from other of San Lorenzo, Santa Fe. Fleas were collected combing the dogs during 10 minutes. Each flea was observed by stereoscopic magnifier for species identification considering head shape and genal ctenidio spines length. In Isla Verde population 142 *Ctenocephalides* spp was collected: 16 dogs presented *C. canis* (104 specimens) and *C. felis* (38); 3 dogs were infested only by *C. canis* (23); 3 dogs were parasitized only by *C. felis* (14); 3 dogs were not infested. In San Lorenzo population 174 fleas from 20 dogs were collected: in 18 dogs only *C. felis* was found (156), and in 2 dogs *C. felis* (16) and *C. canis* (2) were found. In Roldan population 14 fleas were found in 3 dogs of a total of 20 and all specimens were *C. felis*. It is interesting the fact that 76% of the studied dogs of Isla Verde and 10% of Roldan were parasitized by *C. canis*, while in San Lorenzo only *C. felis* was identified. Dogs of Isla Verde lived in a kennel placed in a rural area while those from Roldan and San Lorenzo lived in dog breeds of urban areas. It is necessary to study the conditions that determinate the infestation by *C. canis* or *C. felis*.

58. ASSOCIATION BETWEEN HEMOTROPHIC MICOPLASMA, ECTOPARASITES AND SKIN LESIONS IN KENNEL'S DOGS

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Hemotrophic micoplasma (HM) can be observed as coccoid or bacilar forms over erythrocytes, produce hemolytic anemia and are transmited by hematophage arthropods. It is considered that MH infection produce symptoms only in splenectomized dogs, but HM compatible structures (HMCS) have been seen in blood smears of dogs with dermatologic problems. The aim was the search of association between HM infection, ectoparasitic infestation and presence of skin lesions. Twenty five dogs of a kennel placed in Isla Verde, Córdoba, were studied. Skin lesions were examined, blood samples taken and ectoparasites collected from each dog. When HMCS were detected, dog was considered HM infected. Ectoparasites were identified using a estereoscopic magnifier. Chi Square test was used looking for significant associations. Depilation, dandruff and scabs were looked in 7 dogs; 17 dogs resulted HM infected; *Rhipicephalus sanguineus* and fleas were found in 8 and 22 dogs respectively; *Ctenocephalides felis* and *Ctenocephalides canis* were identified. An estatistic association was found only between skin lesions and *C. canis* infestation ($p < 0,05$). *C. canis* was found perhaps today it is considered that only *C. felis* parasites dogs. This study will be continued using molecular methods for HM detection (blood smears have low sensibility and specificity).

59. RHEOLOGICAL EFFECTS OF PROPOFOL ON ERYTHROCYTES. IMPLICATIONS IN DIABETIC PATIENTS

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Previous studies have demonstrated that anesthetics may affect the hemodynamic of patients during surgery. In this work, we studied the hemorheologic action of propofol (2 to 20µg/mL, near steady-state) *in vitro* to analyze the possible effects on microcirculation in both healthy donors and diabetic patients. The measurements were carried out by using an Erythrodeformeter and by digital analysis of microscopic images. There were no significant changes neither in deformability index (DI) nor in the aggregate shape parameter (ASP). However, the erythrocyte elastic modulus (μ) significantly increased for the highest propofol concentration (20µg/mL) whereas the membrane superficial viscosity (η_m) decreased with propofol concentration up to 5µg/mL. However, it was higher than control for 10 and 20µg/mL. The phase shift (δ) between deformation and applied shear stress (1.5Hz) decreased in a concentration-dependent way in samples treated with propofol up to 5 µg/mL. Furthermore, the Coefficient of Isolated Cells (C_{CA}) increased, suggesting an increase in RBC aggregation due to the treatment. Although no variations were observed in the DI on diabetic patients, δ significantly increased because of propofol action, indicating that RBC membrane may be more viscous and less elastic. Finally, propofol may alter the rheological behavior of RBC membrane at concentrations lower than those previously informed in literature.

60. LICHENS AS BIOINDICATORS OF AIR QUALITY IN URBAN-RURALENVIRONMENT IN ZAVALLA

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An organism is considered a bio-indicator if it can express some change in response to environmental alterations. Lichens have been proposed as possible bio-indicators because of their sensitivity to pollutants, longevity and wide distribution. Zavalla is located at Lat. 33° 1'S and Long. 60° 50'W. This little urban town is surrounded by i) an old park of 100ha named José F. Villarino with 160 forest species, where the Faculty of Agricultural Sciences is located since 47 years ago, and ii) plots of agricultural activity. The aim of this study was to assess the distribution and the seasonal variation of the lichen populations associated to prevalent tree species of these places (park and field plots) to find relationships among the lichen colonization, urban-rural ecosystems, and others factors that allow detecting risks of air pollution. Five and three sites placed in the park and field plots, respectively; were evaluated. Observations were done in winter and spring-summer 2012, and summer-autumn 2013. Evaluation of each tree side (oriented to north, east, south and west) was performed with a grid (14x14 cm²) placed at 160cm height ground. Percentage of Colonized Area was the variable used. Analysis of Variance and Fisher LSD Test were used to detect significant differences among seasons, tree faces and species. There were differences between tree sides, being the southern the most colonized by lichens. Moreover there were differences between tree species, being *Brachychiton populneum* the most colonized. Results showed also that there were no differences as between park and field plots as among seasons.

61. CHARACTERIZATION OF THE WAYS THE STUDENTS EVALUATE THEMSELVES IN THE BIOCHEMISTRY SUBJECT OF MEDICINE IN 2012 SELF-EVALUATION PROCESS, A SECOND STAGE

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The appropriation of the necessary competencies in the professional task could be addressed through a strategy as the self-evaluation. This type of evaluation is used to promote in students the critical reflection about their process of learning and teaching. Biochemistry, annual subject of 2° year of medicine, promotes the self-evaluation process in students. In 2012, the relation between notes of the self-evaluation and those obtained in the first test was analyzed, being the difference statistically significant. It was inferred that students don't evaluate themselves responsibly and that it was necessary to continue the training of this competence. Objective: To determine if self-evaluation activities in the three partial exams during 2012 improved the self-evaluation process in students. Materials and methods: notes of self-evaluation were compared with teachers' corrections. 50 students for the 1° partial exam, 48 students for the 2° and 45, for the 3°. Pearson Chi-Square Test was used with a 5% significance level. C-contingency coefficient was used to determine the association grade in case variables were statistically related. Results: Self-evaluation ways: Underestimates notes, 1° Partial: 9; 2°: 7; 3°: 16. Matches notes, 1°: 15; 2°: 11; 3°: 19. Overestimates notes, 1°: 26; 2°: 30; 3°: 10. The difference is statistically significant for this studied group. The matches between self-evaluation and obtained notes in all partial exams increased while overestimation decreased as exams progressed. Conclusion: successive exercises of self-evaluation improve the students' competence of self-evaluation.

62. ANALYSIS OF EDUCATIONAL INTERVENTION PERFORMED BY AUXILIARY STUDENTS FROM BIOCHEMISTRY, A 2nd YEAR SUBJECT OF MEDICINE

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Biochemistry is a subject of 2nd year of Medicine. Auxiliary students -AA- are advanced students who acted as tutors in the teaching intervention. The AA guided 2° year students in a formative process working on skills and abilities that involved didactic transposition, experientially. An exercise -TP- was proposed with identical contents to the 1st test. Students were requested to punctuate themselves before -TP1- and after -TP2- TP teacher's correction. All students participate voluntarily. During 1st partial exam, students assigned a self note -1°P1- prior to teacher's test evaluation -1°P2. Objective: *To determine effectiveness of the educational intervention of AA on self-evaluation pupils' ability. Material and methods: Marks from TP1/2 and 1°P1/2 were recorded. Students' informed consent to use their notes was requested. Comparing data means and standard deviations, a t-Student test for dependent samples was applied. For 53 students, marks before and after TP were statistically different. Ha: $X_1 > X_2$. The self-assessment ratings were higher in TP1 than in TP2., with small difference. For 62 students, marks before and after 1° P1 presented no differences. Ho: $X_1 = X_2$. Significance for both tests: $\alpha = 0.05$. Notes of 1°P1 and 1°P2 were the same. Conclusion: AA educational intervention had a positive impact on the evolution of pupils' ability of self-assessment for this exam.

63. RELATIONSHIP BETWEEN THE APPROVAL MARKS OF THE FIRST YEAR BASIC SUBJECTS AND THE STUDENTS' ACADEMIC RESULTS IN THE FIRST BIOCHEMISTRY TEST FROM SECOND YEAR OF MEDICINE

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Basic subjects are those that students have to regularize in order to continue the following academic course of the career. Human Anatomy and Histology, Cytology and Embryology are basic subjects for the first year. Biochemistry is an annual basic subject of second year. Factors that may influence the students' academic performance are analyzed since amount of pending subjects is not frequently considered. Our interest is to compare approval marks in basic subjects of first year along with the results in the first 2013 Biochemistry partial test so as to determine if there is a close relationship between them. A total of 59 students' marks were analyzed. The Pearson Chi-Square Test was applied with a 5% relevance. Contingency Test was used to evaluate the association variables. Results: all students passed the final Histology, Cytology and Embryology test. 36 students passed the final Human Anatomy test. 45 students passed the first Biochemistry test. Conclusion: there is a close relation between the approval of final Human Anatomy test and the approval of the first 2013 Biochemistry partial test.

64. DETERMINATION OF DIFFICULTY GRADE IN ANSWERS TO TOPICS OF THE 1ST TEST OF BIOCHEMISTRY IN TWO COHORTS OF MEDICINE 2nd YEAR STUDENTS

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Critical reflection allows the review of teaching strategies. Biochemistry is a Medicine 2° year course. Objective: To determine the difficulty grade in answers to topics evaluated in the 1st test of Biochemistry on 2 cohorts of students, 2012-2013. Material and methods: 8 Written answers evaluated in the 1st Biochemistry test in 2012-2013 were analyzed. 59 students in 2012, 62 in 2013. Each answer has been rated as good -B-, regular -R- and wrong -M- to analyze the topic difficulty presented. Students' informed consent was requested to use exams results. To determine statistically significant relationship (SSR) between results for each question in both years, the Pearson's Chi-Square Test was applied ($\alpha=5\%$) and association degree was set with Contingency C Test. Results: *Answer 1: 2012: 3/10B, 1/10R, 6/10M. 2013: 5/10B, 0R, 5/10M-SSR. *Answer 2: 2012: 2/10B, 3/10R, 5/10M. 2013: 1/10B, 8/10R, 1/10M-SSR. *Answer 3: 2012: 1/10B, 1/10R, 8/10M. 2013: 8/10B, 1/10R, 1/10M-SSR. *Answer 4: 2012: 4/10B, 4/10R, 2/10M. 2013: 4/10B, 6/10R, 2/10M-SSR. *Answer 5: 2012, 2/10B, 3/10R, 5/10M. 2013: 1/10B, 5/10R, 4/10M. Not significant. *Answer 6: 2012, 2/10B, 3/10R, 5/10M. 2013: 4/10B, 3/10R, 6/10M-SSR. *Answer 7: 2012, 4/10B, 2/10R, 4/10M. 2013: 8/10B, 2/10R, 2M-SSR. *Answer 8: 2012, 5/10B, 2/10R, 3/10M. 2013: 9/10B, 1/10R, 1M-SSR. Conclusion: Subjects 1,3,6,7,8 presented less difficulty in 2013. Subjects 2 and 4 showed a greater difficulty in 2013 and 2012 and in subject 5, no conclusions could be inferred. Topics with evident difficulties provided valuable information to modify teaching strategies.

65.

A PRELIMINARY LINKAGE MAP IN PEA (*Pisum sativum* L.) BASED ON SRAP MARKERS (SEQUENCE-RELATED AMPLIFIED POLYMORPHISM)Guindón MF¹, Zayas A², Martín EA¹, Cravero VP¹, COUNTRY EL².¹CONICET. ²Cátedra de Mejoramiento Vegetal y Producción de Semillas, Fac. de Ciencias Agrarias, Universidad Nacional de Rosario. E-mail: ferguindon@gmail.com

A mapping population of Pea was derived from a cross between the cultivars Zav 25 and DDR11 with a view to generating a new genetic linkage map of *Pisum sativum* L. based on SRAP markers. Fifteen primer SRAP combinations were used to detect 183 polymorphic bands (12,2 polymorphic bands/primer combination). The most polymorphic primer combination was Me3-Em2, with 29 polymorphic bands. Fragments generated by SRAP were treated as dominant markers. Goodness-of-fit between the observed and expected segregation ratios was determined by a Chi-square test. Markers without a significant level of segregation distortion ($\chi^2 > \chi^2_{\alpha=0.01}$) were used to construct the map on JOIN MAP v4 software. The linkage map consists in 50 genetic markers distributed on 7 linkage groups (LGs) covering a total of 310,5 cM. The LGs length ranging from 20.4 to 80.8 cM (mean 44,29 cM) and including 4-10 markers. The 75 unlinked markers reflect the need to include a large number of markers to cover the entire genome.

SRAP Primers Sequence:

Me3: 5'-TGAGTCCAAACCGGAAT-3'

Em2: 5'-GACTGCGTACGAATTTGC-3'

66.

DETECTION OF BINDING SITES OF S100 A9 ON HUMAN SPERMATOZOA

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A protein secreted from human oviductal cells *in vitro* that can bind to spermatozoa has been identified as S100 A9. The aim of this study was to detect S100 A9 binding site patterns on sperm in different conditions. Human motile sperm were obtained from normozoospermic samples (n=4). Sperm were incubated in the absence or the presence of S100 A9 (10.0 µg/ml), in capacitating conditions (Ham's F10, 5 mg/ml BSA, 37°C, 5% pCO₂) for 1 h (non capacitated) or 6 h. After 6 h, acrosome reaction (AR) was induced with progesterone 20 µM (30 min, 37°C, 5% pCO₂). Bound S100 A9 was detected by anti-S100 A9 rabbit antibody, followed with Cy3 conjugate anti-rabbit IgG antibody. AR was detected with FITC conjugate *Pisum sativum* agglutinin (PSA). In all experiments sperm viability was greater than 92%. Two hundred cells were counted per experiment and percentage of every staining pattern was calculated. Staining patterns were: AT (no staining), CO (tail and midpiece staining), CA (head staining), PA (tail, midpiece and post acrosomal region staining) and E (whole sperm staining). Protein staining was detected in all groups (at least 8.0% of sperm showed staining). No significant difference of staining patterns was observed between sperm incubated 1 h or 6 h. Binding of S100 A9 to sperm was not related to the state of capacitation. Protein binding patterns did not show significant differences between intact acrosome and acrosome reacted sperm. However, sperm with acrosome reacted presented a lower but yet not significant AT pattern than in sperm with intact acrosome (72.0% vs. 92.0%, p=0.22). Also, a tendency to increase in the E pattern was observed in acrosome reacted sperm compared with intact acrosome sperm (7.0% vs 1.0%, p=0.06). S100 A9 could bind to different sites of a subpopulation of human sperm, and a tendency to decrease AT pattern and to increase E pattern after AR was observed.

67.

CORN: FERTILIZATION AND EFFECT ON YIELD AND QUALITY INDICATORGonzález A¹, Papucci S¹, Cruciani M¹, Pedrol H¹, González M², Incremona M², Ghio A².¹Cátedras de Sistemas de Cultivos Extensivos. ²Fitopatología de la Facultad de Ciencias Agrarias. UNR. E-mail: agonzale@unr.edu.ar

The aim of this experiment was to analyze the influence of nitrogen and sulfur on yield and quality of two corn genotypes. The trial was conducted in Zavalla, Province of Santa Fe, at 60° 53' W, 33° 01' S. The hybrids sown were ACA 2000, which has low yield potential and vitreous texture, and ACA 417 RR2, with high yield potential and soft texture. The treatments (TRAT) consisted of two levels of nitrogen (0 and 150 kg ha⁻¹N) and two of sulfur (0 and 40 kg ha⁻¹S). The experimental design was a randomized complete block with 3 replicates for each hybrid. The plot was 31.2 m² divided in 4 15m rows with 55 cm spacing. Seed density was approximately 80,000 seeds/ha. We harvested 4.16 m² of each replicate and the samples were used to analyze grain yield (YLD), grain weight in hectoliters (WH), weight of 1000 grains (W), protein percentage (% PROT) and flotation index (IF). Results were analyzed by ANOVA and mean yields were compared using Duncan's test. The hybrids showed no significant differences in the variables studied when we analysed the S and the N*S interaction. Both hybrids showed significant differences (p≤0.05) in YLD, WH, W and % PROT with the application of N. Hybrids showed a significant decrease in IF with the application of 150 kg ha⁻¹ N: from 27.2 % to 6.7% for ACA 2000 and from 53.9% to 28.4% for ACA 417RR2. The fall of IF in the ACA 147RR2 hybrid may be associated with its increase in protein percentage that reduced the floury endosperm.

68.

NONLINEAR ANALYSIS: ERYTHROCYTE AGGREGATION PRODUCED BY *Ascaris lumbricoides* LARVAECantalejo M¹, Korol A^{1,2}, Ponce de Leon P¹.¹Facultad de Ciencias Bioquímicas. UNR. ²IFIR-CONICET.

Ascaris lumbricoides is an intestinal pathogen. Its life cycle includes a migration of the larval stages by the bloodstream, allowing direct contact of the parasite with the host's erythrocytes. Previous experiences showed the erythrocyte sialic acid capture by larvae of this helminth. The main object of our work, was to study the erythrocytes aggregation produced by the *in vitro* contact between red blood cells (GR) with L1/L2 larvae parasite applying nonlinear math analysis. We had worked with 7 larvae concentrated (ALLC) at 5100 ± 200 larvae/mL, and fresh human GR, O blood group. The GR were treated by the incubation of the GR coulotte with equal volume of ALLC during 90 minutes at 37°C (Treated GR). We used GR control suspensions, which were incubated in the same way and at equal phosphate saline buffer volume (pH 7,4; osmolarity 295 mOsm/kg). We applied the Digital Image Analysis, taking 3 times images each 10 minutes of the Treated GR and the Control GR as well. Using the technique of box-counting, with the time series data corresponding to free cells from the full sites, we had obtained box dimension and the temporal correlation. The following comparisons were obtained: GR entire vs. GR entire, and GR entire vs. GR treated with ALLC. The results of the 230 analyzed images of GR Control, showed would have a behaviour like 1/f noise, for the first 3 steps of the process, on the other hand for t>20, this behaviour became chaotic like. On the other hand, for the 170 images corresponding to Treated GR for the first 5 steps, it would be a white noise like behaviour, while for t>40, the dynamics evolution, turns to be chaotic. Moreover, it was found a maximum peak of correlation when t=70. We have linked math tools with the biological interaction between the erythrocytes and the *Ascaris lumbricoides* larvae concentrated.

69. EFFECT OF MUSCULAR LARVA OF TRICHINELLA SPIRALIS ON THE DESIALYLATION APPLYING THE "BOX COUNTING" METHOD

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Trichinella spiralis is the cause of the cosmopolitan disease known as trichinosis. In previous experiences, it was communicated that the red cells (RC) incubated with infective larvae of *trichinella spiralis* shows an increase in aggregation compared with the produced, when the same red cells staying in saline solution indicates that the parasite captures the sialic acid of the erythrocyte. The objective was studying the effect of the muscular larvae of the parasite on the erythrocyte desialylation, applying non-linear mathematical analysis. It was worked with 6 muscular larvae concentrated (LM1) with 4300 ± 200 larvae/mL and 6 concentrated (LM2) with 8700 ± 300 larvae/mL. It was worked with Red blood cells O group which were incubated equally with the larvae concentrated. Control red cells were incubated in the same way with equal volumen of Saline Phosphate Buffer (pH 7,4; osmolarity 295 mOsm/Kg). It was applied the Image Digital analysis technique taking pictures at 0 minutes, 60 minutes and 120 minutes, per duplicated. The data obtained by box-counting at incubation times 0, 60, and 120 minutes, were used to obtain the value of fractal slope (D). The results showed for all the samples at 0 minutes, that the slope was variable and random: (0.1; 0.8). For the incubating times 60 minutes and 120 minutes the data variability was conserved for the samples incubated with LM1 and LM2, while the RC Control at T60 the data variability decreased, resulting: (0.15;0.4) and for T120 resulted: (0.25;0.35). These preliminary experiences showed that the control samples keep the anionic charge. So the experience carried out could collaborate in the interpretation of the immunological interaction established between the muscular larva and the cell where it encysts.

70. HEPATIC OXIDATIVE STATUS IN MICE FED WITH DIETS CONTAINING TRANS FATTY ACIDS AND DIFFERENT UNSATURATED FATTY ACIDS SOURCES

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Trans fatty acids (TFA) increase triacylglycerides (TAG) in liver depending on the source of dietary fatty acid (FA). Since a raise of hepatic TAG generates an oxidative environment, the aim of this study was to analyze the differential effect of diets with TFA and different unsaturated FA profile on some parameters related to oxidative stress. Male CF1 mice (22 g) were fed (30 days) with diets differing in the dietary n-3/n-6/n-9 unsaturated FA ratios: Canola (CO: 11/19/63), Maize (MO: 1/53/31) or Olive (OO: 1/10/76) oils containing 0.75% of TFA (COt, MOt and OOt, respectively), or not. TAG ($\mu\text{mol/g}$) content, lipoperoxidation status (LPO: $\eta\text{mol MDA/g}$ tissue), reduced glutation levels (GSH: $\mu\text{mol/g}$ tissue) and catalase activity (Cat: $\mu\text{mol/min/mg prot}$) were determined in liver. Results were analyzed by ANOVA followed by Tukey's test ($p < 0.05$; $n = 5/\text{group}$). OO:OOt;OO:MOt;CO:COt were; TAG: 32 ± 1^a ; 63 ± 8^b ; 32 ± 3^a ; 39 ± 6^a ; 34 ± 2^a ; 70 ± 5^b ; LPO: 69 ± 4^a ; 60 ± 2^a ; 62 ± 3^a ; 73 ± 3^{ab} ; 87 ± 3^b ; 85 ± 3^b ; Cat: 111 ± 8^a ; 120 ± 2^a ; 97 ± 8^a ; 100 ± 2^a ; 138 ± 6^b ; 139 ± 4^b ; GSH: 3.1 ± 0.2^a ; 5.0 ± 0.1^b ; 3.8 ± 0.4^{ab} ; 4.4 ± 0.1^{ab} ; 4.8 ± 0.5^b ; 4.3 ± 0.6^{ab} , respectively. Liver LPO was increased by the CO and COt diets, which were not compensated by the increase in Cat activity. This could be related to the high polyunsaturated FA content in this oil, which is susceptible to oxidation. TFA increased GSH levels balancing the oxidative environment generated by liver TAG accretion in olive oil fed animals, while it is probably that, in canola oil fed animals, the increased Cat activity could mitigate the oxidative effect of steatosis. Therefore, the effect of dietary TFA in parameters related to oxidative stress depends on the source of dietary fat.

71. STUDY OF AHAS ACTIVITY PATTERN IN DIFFERENT SUNFLOWER TISSUES

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Acetohydroxyacid synthase (AHAS) is the enzyme that catalyzes the first step in the biosynthesis of branched chain amino acid and is target site of several herbicides. The aim of this work was to study of the AHAS activity pattern in sunflower (*Helianthus annuus* L.). Different organs (leaves, shoots, roots, flowers and embryos) were evaluated through *in vitro* assays at several developmental stages. The activity in leaves and embryos was over 10 times that in flowers, roots, and hypocotyls. The highest AHAS activity in roots was observed in 4- and 25-day-old seedlings, whereas the lowest activity in hypocotyls occurred in 6-day-old seedlings. In leaves, AHAS activity was maximal at earlier developmental stages (8-day-old seedlings), followed by the new leaf pair of 25-day-old seedlings. In this tissue, the minimal values were detected in the oldest leaves. Low levels of AHAS activity were observed in flowers. The highest activity was found in immature disc flowers. A bell-shaped activity pattern was observed for embryos, with the maximal expression point at 20 days after pollination and the lowest one near seed maturity, at 35 days after pollination. These results are the first approach to characterize AHAS expression in several organs and tissues during developmental stages in this species.

72. SOIL-LESS BIOASSAY FOR THE IDENTIFICATION OF PLANTS CARRYING DIFFERENT IMIDAZOLINONE-TOLERANT ALLELES IN SUNFLOWER

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The multiallelic *Ahas11* locus of sunflower determines the level of imidazolinone (IMI) tolerance in this species. *Ahas11-1* and *Ahas11-3* are IMI tolerance alleles at this locus controlling the traits known as Imisun and CLPlus respectively. The objective of this study was to evaluate growth response of three sunflower genotypes using a soil-less bioassay: CLPlus (*Ahas11-3/Ahas11-3*), Imisun (*Ahas11-1/Ahas11-1*) and susceptible wildtype (*ahas11/ahas11*). Achenes were germinated on Petri plates and watered with a control solution and 5 concentrations of commercial herbicide Clearsol Plus® (BASF): 1-10-100-1000-10000 μM . After a 4 days incubation period, germination percentage (%G) and hairy roots percentage (%P) were calculated. Plantlets were collected and scanned into digital images and primary root length (RL) was measured using ImageJ 1.44. %G was not affected by the herbicide for any genotype. CLPlus plantlets were significantly affected for %P at herbicide doses of 1000 μM . Plantlets of susceptible genotype showed a significant reduction for RL at the lowest herbicide dose. Visual inspection of root development could be useful criteria to distinguish among susceptible plants and those expressing different IMI tolerance alleles. The seed germination bioassay described in this study could allow the implementation of fast, reliable and cost-effective diagnosis method that could be useful to assist breeding programs.

73. STUDY OF SPERM PROTEINS THAT INTERACT WITH LACTOFERRIN

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We have identified a protein from oviductal secretion, with the ability to bind sperm and modulate the interaction with zona pellucida, as human lactoferrin (hLf). The aim of this study was to identify sperm proteins than can bind to hLf. Motile human sperm were collected by swim up from normozoospermic donors (n=7). Samples were incubated in the presence of 100 µg/ml hLf coupled with sulfosuccinimidyl-2-[6-(biotinamido)-2-(p-azidobenzamido) hexanoamido] ethyl-1,3'-Dithiopropionate (SBED). Briefly, SBED is a crosslinking reagent that contains an active ester, a photoactivatable aryl azide and a biotin label that can be transferred to receptor molecule by reducing conditions. After 1,5 h incubation at 37°C, 5% pCO₂, sample was exposed to UV radiation in order to develop hLf-SBED-receptor covalent linkage. Cells were lysed in non reducing conditions. Total protein concentration was determined and SDS-PAGE (8%-16%) was performed in reducing (to release hLf from its receptor) and non reducing conditions. After proteins were transferred to nitrocellulose membranes, biotin labeled ones were detected by chemiluminescence. Reducing conditions revealed 4 bands of 50 kDa, 35 kDa, 27 kDa y 19 kDa. Protein bands were analyzed by nano LC-MS/MS. Six of the identified proteins were considered as candidate receptors: pyruvate kinase, heat shock-related 70 kDa protein 2, glyceraldehyde-3-phosphate dehydrogenase, complement component 1 Q subcomponent-binding protein, izumo sperm-egg fusion protein 4 and protein DJ-1. One of these proteins, glyceraldehyde-3-phosphate dehydrogenase, has been previously reported as hLf receptor in another cell type.

74. GROWTH IN MILK WITH ADDITIVES AND DETERMINATION OF CELL SURFACE HYDROPHOBICITY OF LACTIC ACID BACTERIA OF AVIAN ORIGIN

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In vitro and technological properties have to be taken into consideration in the selection process of probiotic microorganisms. This study compares the growth of three lactic acid bacteria strains of avian origin (*Lactobacillus salivarius* DSPV 001P, *Lactobacillus salivarius* DSPV 003P and *Lactobacillus agilis* DSPV 004P) in milk with additives and determine their cell surface hydrophobicity. Strains were inoculated in rehydrated skim milk powder + 5% w v yeast extract + 0.003% w v MnSO₄ and incubated during 24 h at 37°C. After decimal dilutions in Ringer ¼ solution, viable cell counts were determined by pour-plating method in MRS agar. The *in vitro* cell surface hydrophobicity was established using n-hexadecane. The percentage of cell surface hydrophobicity (%H) of the strain adhering to hexadecane was calculated using the equation: $H\% = [(A_0 - A)/A_0] \times (100)$, in which A₀ and A represent the OD 600nm before and after extraction with n-hexadecane respectively. Strains can grow well in milk with additives (9.22 log₁₀ CFU/ml for *L. agilis* DSPV 004P, 8.81 log₁₀ CFU/ml for *L. salivarius* DSPV 001P and 8.53 log₁₀ CFU/ml for *L. salivarius* DSPV 003P), and have moderate to high levels of hydrophobicity (72% for *L. salivarius* DSPV 003P, 69% for *L. salivarius* DSPV 001P and 63% for *L. agilis* DSPV 004P), associated with the ability to adhere to epithelial cells and mucosal surfaces.

75. ANTIMICROBIAL RESISTANCE OF THERMOPHILIC CAMPYLOBACTER ISOLATED FROM FARMHOUSE BROILERS

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As part of zoonotic diseases, campylobacteriosis is one of the most common worldwide and causes acute diarrhea in humans. The indiscriminate use of antimicrobials (ATM), in poultry production, produces the emergence of resistant bacterial strains. The aim of this study was to evaluate the susceptibility to various ATM of different strains *C. jejuni* and *C. coli* isolated from chickens of commercial farm collection. For this study was used the protocol developed by Clinical and Laboratory Control Standards Institute (CLSI) document M7 -A7 (2010). Twenty three strains of thermophilic *Campylobacter* were processed. The percentages of resistance obtained were: 100 % AN, AMP 52%, 100 % CIP, ENR 70%, 13% ERI, GEN 0%, 13% TET. Multidrug resistance patterns were observed, the most frequent were: AN-AMP-CIP-ENR-TET (30%) and AN-AMP-ENR (22%). A high resistance of the strains to AN, CIP and ENR may result from the use of these ATM both in the primary production and to treat diseases of poultry. Additionally, it is concluded that the implementation of an active surveillance system and political criticism in the entire food chain is necessary, from production to consumption of chicken meat, to prevent transmission of this microorganism to products for human consume.

76. PRELIMINARY ANALYSIS OF THE SYSTEMIC BEHAVIOUR OF THE PULMONARY PARENCHYMA BY DETERMINATION OF THE FRACTAL DIMENSION IN COMPUTERIZED AXIAL TOMOGRAPHY

Gambalete JC, Cornalis Bouzo NC, Márquez JS, Lujan Masino MP, Acosta T, Moretti C, Waelkens EG, Facciuto F, Riquelme MV, Casiello FG, Carral L, Obaid Y, Girard F, López L, Torres Vilas LP, Fernández M, Espona C, Cabral ME, Furlan C, Kuchen CR, Vinuesa MA.

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Computerized Axial Tomography scans (CTs) have become the gold standard for the diagnosis, evaluation and follow-up of thoracic pathologies. The respiratory system, a complex system formed by relatively similar interacting elements, behaves as a unit in a manner which cannot be explained by analyzing each of its elements in particular. Given that the pulmonary tissue possesses the properties of self-similarity and fractional dimension, it shares the properties of the mathematical model of fractals. The objective was to assess whether the fractal dimension (FD) of the pulmonary area could become a useful parameter to analyze changes in the tissue's behavior. 468 fractal studies were performed using 13 thoracic CTs with pulmonary window. These were selected at random, with and without the presence of pathologies. Box-counting method was used to estimate the fractal dimension, using 18 slides for every processed CT. Given that results varied from 1 to 2, the fractal dimensions were found to be representative of a two-dimensional image. Values escaping this range, shown by the maximum and minimum FD value previously stated, indicate a different fractal behavior suggesting the necessity of conducting further studies.

77. ANALYSIS OF THE PHYSIOLOGICAL CHANGES IN THE INTERNAL FEMORAL INTERCONDYLAR DISTANCE DURING CHILDHOOD

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Changes in the osteo -myo -articular morphology of the lower limb occur orderly with age, as the child acquires and develops positions that allow the acquisition of the normal anatomic and mechanical axis that lead to a safe walking. The aim of this study is to investigate the potential physiological variations as measured in the DICFI as a function of children age. The units of analysis of the study were 204 children of both sexes, aged between 1 and 10 years. A negative sigmoid relation of DICFI data, as a function of children age was observed for both sexes; DICFI , reaches its maximum value at 36 months , corresponding to the normal separation of the knees (genu varus). This is due to the increase of the support base to achieve balance at the start of the walking; a significant reduction, by approaching the knees (genu valgus) is expressed later on. These results are original, and provide information on the evolution of DICFI as an anthropometric measure that assess the development of the axis of the lower limb as a function of age, accounting for an accurate determination of genu varus and valgus physiological in childhood, which must be considered not in isolation but rather in relation to the maturational stage of the child.

78. ANTHROPOMETRIC ANALYSIS OF THE EVOLUTION OF THE INTERNAL FEMORAL INTERCONDYLAR DISTANCE AND THE SIZE IN THE MALE CHILD

Ceballos EA¹, Casiello AC¹, Torres Rivas LP¹, Casiello FG¹, Riquelme MV¹, Facciuto F¹, Gargano SG¹, Cabral ME¹, Capozza RF, Traina E, Capozza R¹, Feldman S^{1,2}.

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The internal femoral intercondylar distance (DICFI), extended between the inner sides of both knees, specifically between the medial facet of the internal femoral condyles , has fluctuations that accompany normal development of children. The aim of the present research is to establish whether DICFI shows some correlation with variations in height, and from there, if it can be considered as a potential anthropometric indicator. The units of analysis of this study were 102 male children between 12 and 120 months of age, attending in the pediatric consultation control without osteo -myo -articular pathology. The results showed that DICFI suffers changes due to the rotation of the bony skeleton. These changes are represented as a decreasing hyperbolic relation between DICFI and children size. A functional asymptotic relation between DICFI (y-axis) and children height (x-axis) was found: the relation was established as $y = x / (a + bx)$, with $a = 81.43$, $b = 1.37$, $p < 0.01$. Our results agree with the physiological and anatomical changes determined by growth evolution , which are: the rotation of the proximal femur; the tibial rotation and the shape of the feet. DICFI is an useful tool that should be considered as an anthropometric measure, since controlling the normal axis of the lower limbs can be useful to early detection of orthopedic disorders.

79. FRUITS AND VEGETABLES CONSUMPTION AMONG PATIENTS WITH CHAGAS DISEASE. PRELIMINARY RESULTS

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A descriptive cross-sectional study is being carried out in the Cardiology Department of the Hospital Centenario, Rosario, Argentina. So far, a sample of 36 patients with Chagas disease was studied in order to describe their consumption of fruits and vegetables. Prior to their inclusion in the study, written informed consent was obtained from all participants. Data were collected from medical records, and all participants underwent a personal interview of one hour long. Some socio- economic - cultural data were collected. Weight and height were also recorded. Dietary consumption was estimated by applying a food-frequency questionnaire. A standardized photographic atlas was used to determine food portions. Means and standard deviations of daily intake of total calories (kcal), fruits, vegetables and dried fruits were calculated. Moreover, fruits and vegetables were classified according to their botanical groups. Patients mean age was 53 ± 11 years, and 66,7% were females. Mean total calories intake was $2440,7 \pm 1189,8$ and no differences were found by sex. Mean vegetable and dried fruits consumptions were higher in men than women (Vegetables: $432,3 \pm 244,9$ and $250,7 \pm 137,6$; $p = 0,02$); (Dried fruits: $1,4 \pm 4,6$ and 0 ; $p = 0,04$). The results obtained so far suggest that there are different consumption patterns between men and women. We are working to increase the sample size in order to study the possible association between some food and nutrients intake and the risk of chronic Chagas cardiomyopathy.

80. INCIDENCE OF FUNGIC PATHOGEN IN GRAINS OF MAIZE FROM A FERTILIZATION NITRO-SULPHURED CROP

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The object of the present work was to determine the incidence of fungic pathogenic in grains of two cultivars of maize, with different levels of nitro-sulphured fertilization. The cultivars used were ACA 2000 and ACA 417 RR2. On 2012 the treatments consisted of an arrangement factorial of three levels of N (N_0 : control; N_{75} : 75 kg N.ha⁻¹ and N_{150} : 150 kg N.ha⁻¹) and two levels of S (S_0 : 0 kg S ha⁻¹ and S_{40} : 40 kg S. ha⁻¹). To determine the fungic incidence the grains incubated on 2 % APG with light alternation (ISTA, 2009). A total of 200 seeds / hybrids were analyzed. The percentage of each pathogen were determined. The statistical was in BCAD with 3 repetitions / hybrids. The information was analyzed by ANOVA and Duncan. The pathogens present were *Aspergillus flavus*, *Diplodia* spp., *Fusarium* spp. and *Penicillium* spp. The incidence of *Aspergillus flavus* was low (0-3%) did not present differences between levels of N, level of S, and inteacción NxS. *Diplodia* were no significant differences, the values were low (0-3%). For *Fusarium* graminearum the incidence values were no differences (15-50%). The values of *Fusarium moniliforme* were of 0 to 3%. *Penicillium* with values on 50% to 90% showed differences between levels ($p < 0,05$) only on ACA 2000. The highest values on percentage were on N150- S0 y N0-S40.

81. RESISTANCE SOURCES TO STEM AND POD BLIGHT OF SOYBEAN CAUSED BY TWO *Phomopsis* ESPECIES IN ARGENTINA

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Stem and pod blight is a disease associated to the reproductive stages of soybean (*Glycine max*), that depress the sanitary and physiological quality of seeds. The aim of this study was to assess the behaviour of four soybean resistance sources to interact with *P. longicolla* (Plo) and *P. phaseoli* var. *sojae* (Pps) (teleomorph: *Diaporthe phaseolorum* var. *sojae*, Dps), both, the causal agents of the disease. In greenhouse conditions, experimental design included as plant germplasm: four soybean genotypes carrying one or two *Rpsd* genes and two genotypes of reaction non known, and as fungal germplasm: seven Plo isolates, one Dps, and two experimental controls (one each *D. phaseolorum* var. *meridionalis* and var. *caulivora*). Inoculations were made with a micro needle to produce a micro-injury and introduce 5µl of a conidial (co) suspension (1.10^{5-6} co / ml) in the axil of the first and third trifoliate leaves. Results were analyzed by a factorial with five categories (6 genotypes, 10 fungi, 3 pots, 4 plants, 5 internodes) and LSD Fischer Test. Dependent variable analyzed was severity (% infected area) of internodes / plant. As result of all interactions, genotypes carrying two *Rpsd* genes (*Rpsd1* y *Rpsd2*) y (*Rpsd2* y *Rpsd3*) were the most resistant, while, Plo7 (from Tucumán) and Plo1 (from Santa Fe) were the isolates most virulent. Specific interactions related to *plant susceptibility / pathogen virulence* as *plant Resistance / pathogen Avirulence* were also detected. The results showed an advance in the knowledge of this interaction and its possible application in plant breeding.

82. CHARACTERIZATION OF PASTURES THROUGH MULTIVARIATE ANALYSIS

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The objective of this study was to characterise pastures through vegetation and soil traits applying multivariate analysis. Nine pastures (P1 to P9) were planted in Vertic Argiudoll with very similar genetical characteristics and in a relatively nearby location. The age of the pastures was one year for P1, two years for P2 to P6 and P9, seven years for P7 and four years for P8. Pasture composition was lucerne (*Medicago sativa* L.), tall fescue (*Festuca arundinacea* Schreb.) and rescuegrass (*Bromus catharticus* Vahl.); the exception was P6, a lucerne monoculture. P5 was cut, and in the other were rotational grazing pastures. The study was done on May 2012, in three sampling sites per pasture. Variables evaluated were: forage abundance, number of shoots per plant of lucerne, number of tillers per plant of grasses, forage basal cover, litter mass, depth up to B horizon, structural stability at 0-5 cm and at 5-20 cm, total nitrogen at 0-20 cm and asimilable phosphorous at 0-20 cm. Twenty-seven groups of data submitted to principal component multivariate analysis (CP), using a correlation matrix with PC-ORD. The first to CP explained all together 55,51% of total variance (CP1: eigenvalue = 3,495, $p \leq 0,001$ and CP2: eigenvalue = 2,056 and $p \leq 0,006$). CP analysis allowed to recognise relatively high correlations between some pairs of variables, which variables are involved in the correlations and which allowed a more homogeneous grouping of the sites studied. Results validate the use of this statistical method for characterizing implanted pastures.

83. EFFECT OF DIAZEPAM (DZ) ON CYCLIN D1 EXPRESSION IN RATS AFTER PARTIAL HEPATECTOMY (PH)

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Translocator protein (18 kDa) (TSPO), previously called peripheral benzodiazepine receptor (PBR), is involved in cell proliferation. Previous studies from our laboratory showed that mRNA TSPO is increased 24h after PH. DZ, a TSPO ligand, inhibited mRNA TSPO increase and it stimulated mitosis in the remnant liver. The aim of this study was to evaluate the effect of DZ on the cyclin D1 after PH. Male adult Wistar rats received once daily doses of 3 mg/Kg DZ (i.p) or its vehicle during 3 days. On the third day, PH (70%) was performed according to the method of Higgins and Anderson. SHAM surgeries were carried out. After 24h, livers were removed. Proliferating cell nuclear antigen expression was evaluated by immunohistochemistry and cyclin D1 expression, by Western blot. Results were expressed as mean \pm SEM of 3-4 observations. Proliferation Index (PI) of hepatocytes was higher in PH than in SHAM group; and DZ treatment induced an increase in PH rats. Cyclin D1 expression followed the same pattern as PI (SHAM = 2.1 ± 0.4 ; HP = $3.4 \pm 0.3^*$; SHAM+DZ = $1.8 \pm 0.2\#$; PH+DZ = $4.5 \pm 0.2^*\#$; * $p < 0.05$ vs. SHAM; # $p < 0.05$ vs. PH). These results suggest that TSPO is involved in hepatocyte proliferation during liver regeneration.

84. EFFECT PRODUCED BY A LIPOPEPTIDE BIOSURFACTANT OVER THE ELECTROACTIVE BEHAVIOR OF AN ELECTRON SHUTTLE

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A biosurfactant (BS) obtained from an endophytic strain *Bacillus subtilis* AC7 was studied. The strain was cultivated in LB for 24 h at 140 rpm. The BS with 90% structures of surfactin and 10% structures of fengycin was extracted from a surnageant with ethyl acetate/ethanol, the organic fraction was evaporated with a rotary evaporator. Solutions of BS in DMSO were mixed with acuose solutions of Anthraquinone disulfonate (AQDS; A: 7.6 mM; B: 4.6 mM) used as model of an intensity and redox capacity effector. The electroactive behaviour of the BS+AQDS system was studied by means of cyclic voltammetry (CV) and differential pulse voltammetry (DPV) scans using glassy carbon, Pt and calomel (SCE) electrodes. In CV two peaks were observed, and the $E_{1/2}$ were -658 and -1014 mV (P1 y P2, respectively). Regarding the control without additional BS, in the cathodic wave Pc1 increased between 20-30 % (A and B) and Pc2 decreased 10% (A) or disappeared completely (B). In the anodic wave (A) two complementary peaks were found, whereas in (B) there was only one, also complementary to the one found in the cathodic wave. In both cases, the magnitude of the peaks was inferior to the control solution. The results show that BS affected the redox speciation of AQDS, suggesting that these molecules has a capacity of affecting the processes modulated by the redox system status, as the adhesion of bacteria to surfaces.

85. CONTRAST BETWEEN CORPORAL COMPOSITION INDEX IN MALES AND FEMALES OF ESS AND ESMT ADULT RATS

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It would be valuable to have an only index to determine whether a specimen of animal models of obesity and diabetes is obese. The aim of the present work, realized in eSS rats with spontaneous diabetes type 2 and eSMT (crossing of eSS with β , obese), characterized by higher biomass than eSS and an early and intense development of the diabetic syndrome, it was to contrast Lee Index (IL = cube root of the corporal weight (in g) / naso-anal length (in cm) with other measures could contribute to categorize individuals according to their body shape. According Bernardis and Patterson, $IL \geq 0.30$ indicate overweight in rats. Males eSS and eSMT one year old supported in the habitual breeding conditions registered Body weight (BW), length of tail, nasoanal length (NL), total length, abdominal circumference (CA), thoracic circumference (CT) were registered and the Lee index (LI:BW/NL), BMI (BW/NL), I 1: CA-CT/LN y el I 2: (CA-CT)/LT. Animals were discriminated into two groups according to the cutoff IL: $IL < 0.30$ and $= 0.30$ IL. For the not obese animals ($IL < 0.30$), homogeneity between lines for all the variables. In contrast, those with $IL \geq 0.30$, there were differences in P, CA, CT and CA / LN. We conclude that IMC, CA / LN and CA / LT categorized individuals in form similar to IL, and would constitute indicators useful indicators of corporal conformation for the purposes of make comparisons between both lines.

86. RELATION BETWEEN MURINOMETRICS MEASURES IN MALE AND FEMALE OF SPONTANEOUSLY DIABETICS RATS eSS

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The nutritional valuation of an individual includes multiple perspectives: clinic, biochemistry and anthropometric. For murine models of obesity and diabetes, it would be valuable to have reliable indicators whose study, in different stages of development and normal breeding conditions, allows establishing benchmarks against dietary or physical activity interventions, etc. In order to analyze the performance of various indexes as predictors of overweight and obesity, we studied correlations among certain murinometrics measures in eSS rats (spontaneously diabetic line). 20 animals of each sex, breeding under normal conditions, were evaluated at 4 and 6 months. Body weight (BW), length of tail, nasoanal length (NL), total length, abdominal circumference (CA), thoracic circumference (CT) were registered and the Lee index (LI:BW/NL), BMI (BW/NL), I 1: CA-CT/LN y el I 2: (CA-CT)/LT. LC and IL showed significant relation at both ages in males ($r=0.881$; $p=0.000$ and $r=0.645$; $p=0.000$); and P and LC in females ($r=0.901$; $p=0.000$ y $r=0.738$; $p=0.002$). Other measures are not consistent at both moments. More studies under different ages and conditions are necessary to define the best murinometric index of the eSS.

87. RHEOLOGICAL BEHAVIOR OF LIQUID-CRYSTALLINE EMULSION OF TOPIC APPLICATION WITH THE INCORPORATION OF A VEGETAL ACTIVE

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Emulsions with liquid crystals present higher stability than a conventional emulsion. The lyotropic liquid crystals emulsions proved to be suitable systems for the controlled release of hydrosoluble and liposoluble drugs. We propose to study the rheological behavior, which is closely linked to the stability in the biphasic systems, on emulsions with liquid-crystalline interface (sample 1) and emulsions with liquid-crystalline interface incorporating *Rosa Mosqueta* oil, into the oil phase and the crystalline structure (sample 2). The emulsions were prepared by a method of formation of liquid crystals. All determinations were made for triplicate. The formation on liquid crystal structure was checked using a polarizing microscope brand Carl Zeiss. The rheological profile was carry out with a viscometer brand Brookfield. The pH was determined with phmeter brand Metrom 744. The emulsions (1) and (2) showed liquid-crystalline structure and very similar secondary drops in the emulsions without active and which has *Rosa Mosqueta*. Rheological proved to be plastics bodies with thixotropy, values corresponding to the sample with *Rosa Mosqueta* oil are lower than the sample without the active. The pH was 7,2 – 7,5. The incorporation of an active as the *Rosa Mosqueta* oil decreases the rheological values, despite this are values high enough to prevent cremated, sedimentation or phase separation. The system has thixotropy and the presence of liquid crystals and secondary droplets increase the physical stability of biphasic systems. The Ph is suitable for topical application.

88. THE PERFORMANCE OF MAGRARIO GENOTYPE IN CROSSES WITH OTHER OVINE BREEDS

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A new genotype, named Magrario (M), was obtained from a backcross programme of the Ideal breed (I) to Texel breed in the Experimental Station at Zavalla. M lambs (males and females) were compared under feed lot conditions with Hampshire Down (HD) lambs during a period of two months in the postweaning. Also crosses (MxHD), (MxI) and (IxHD) were evaluated in the same conditions for several traits: Initial Weight (IW), Final Weight (FW), Average Daily Gain (ADG) and relative ADG (rADG) as an estimation of feed conversion. At the end of the experiment ultrasonic methods were used to obtain *in vivo* several measures to evaluate fat depot on *Longissimus dorsi*. Some of them were Subcutaneous Fat (SF) and Permuscular Fat (PF). Significant differences were found between M and HD for SF: $M=0,52 \pm 0,03$ y $HD=0,81 \pm 0,07$ ($p < 0,001$). The cross MxHD had an intermediate value of $SF=0,65 \pm 0,12$ showing a reduction of 20% respecting to HD. A cluster analysis was also performed for all the variables evaluated. In males, with a cophenetic correlation of 0.87, four groups were detected. All lamb crosses are near to M lambs. These results were coincident for females.

89.**MULTIRESISTANT BACTERIA: INTESTINAL COLONIZATION IN NEWBORNS HOSPITALIZED IN AN INTENSIVE CARE UNIT***Cerutti C, Ombrella A, Córdoba L, Bulfoni M, Lenarduzzi V, Fernandez F, Levinson L, Olmedo C, Boncompain C, Ponessa A, Gambandé T.**Faculty of Medical Sciences. UNR. Centenario Hospital. E-mail: claracerutti@hotmail.com*

The use of endovascular catheters, surgical procedures, extremely premature and immunosuppressed, antimicrobial therapies, endotracheal intubation are factors that promote intestinal colonization with multiresistant bacteria. The aim of this work was to detect intestinal colonization by multiresistant Gram-negative bacteria producing extended spectrum beta lactamase and/or carbapenemase and *Enterococcus faecium* resistant to vancomycin in infants admitted to a Neonatal Service of Rosario. of hospitalization and then weekly until discharge. The gender and species identification of the isolates was performed by conventional phenotypic tests . Sensitivity was detected by the method of disk diffusion. 72 samples were processed. 11 were positive for the isolation of multidrug-resistant bacteria, including 7 strains of *Klebsiella oxytoca* beta lactamase (+), 2 of *Klebsiella pneumoniae* beta lactamase (+) and 2 *Stenotrophomonas maltophilia* sensible only to ciprofloxacin and trimethoprim - sulfamethoxazole were identified. In this way we try to prevent nosocomial infections in high-risk patients, with the economic impact that the treatment entails and its high morbidity and mortality.

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