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1. STUDY OF HEMODONATION IN THE ROSARIO CITY

Padros Moira S, Spina GM, Rossi EM.

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Through the blood donation, we can make gives give blood twice or more times of year, being able to attend all the needs and transfusions would be more sure and efficient, willing, costumes, and no replased giving racional use and responsibility of the blood products. the point was to analyse the behavior of the hemodonation into the population of both people sex from 18 to 65 in different parts of rosario city. it will be realised 70 surveys in the year 2007 by hemodonation promoters where 44.3 female sex and 55.7 male sex. the 54.3 gave blood. 1) the reason of the donation by own willing? is 0% and blood reposition from family or friend 100%.the average of donation is 2.89%, ds 3.48%. 2) would you give blood back? yes, 89.5, no 10.5.the ones who didn't give blood were 45.7 and the reason they didn't give blood was, illness 25%, and 75% nobody called them to give it. 3) would you be willing to give blood? yes, 60% and no 40%. 4) what would miss to give blood? 100% would answer more information.being seem the last results we can get to the conclusion that there is a confusion in the willing givers and the reposition givers.besides, there is a behaviour of no collaboration as a usual and willing, with the community.

2. INTEGRAL PLAN FOR OBESITY IN ADOLESCENCE

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Obesity in adolescence is a flaw exceeding undernutrition worldwide and leading to physical consequences, i.e., insulin resistance, hypertension and hypercholesterolemia, and psychological ones, such as low self-esteem, social troubles. Objective: Since prevention is the main tool the proposal of an integral plan emphasizing changes in nutritional behavior, family interaction and personalized physical activity was attempted. Methodology: A group of 75 patients (Ps), both sexes, aged 13-17yr with overweight and obesity were submitted to a nutritional plan matching their necessities, without restrictions, focusing on meal portions and selection, with medical, psychological and family support. Parents signed informed consent. Changes regarding sedentarism behavior, such as watching TV, videogames and PC utilization, was promoted, as well as encouraging the scholars to practice physical activities, sports generating wellness, "esprit de corp" and fair competition, through cognitive-behavioral therapy groups, corporal scheme techniques, group ludic activities, visual techniques in heterogeneous groups, control groups and follow up for parents. Some cases were complemented with personal psychotherapy, personalized Internet and telephone follow up was implemented, attaining a greater motivation and interaction. Results: After 6 months treatment, adjusting their proper weight and height percentiles, taking into account their variations, 25 Ps lost between 1-5kg; 17 Ps, 5-10kg and 18 Ps attained their ideal weight. Fifteen Ps abandoned treatment. Conclusion: the interdisciplinary treatment, specifically focused on adolescents, displaying discussion intensive connection, and analyzing the evolution of their participation originated a greater adherence, namely, the Ps accepted the precise indications without questioning, with a very important parents support regarding weight loss, follow up and long-term habit change.

3. GASTRIC MUCOSAL PROTECTION BY CB1 CANNABINOIDE RECEPTORS AGONISTS

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Study of Marihuana (Mari) (Delta (9) - Tetra hydro cannabinoid CB1 agonist and CB1 Rimonabant (Rimo) antagonist; in acute gastric lesions induced by ethanol (Etoh), Indometacin (Indo) and stress (S). Randomized Female Wistar rat Groups (n = 7 each group), 200 g, 24hr fast, water ad-libitum, were used. 1. 1 ml orogastric saline (OG), 24hr wait. 2. 1 ml 20% OG Mari solution. 3. 1-5 mg/kg IP Rimo. 4. 1 ml 96° OG Etoh 20 min. 5. 30 mg/Kg SC 24hr Indo. 6. E. 6hr immobilization and water immersion in 18°C water. 7. 60 min Mari., Etoh. 8. 60 min Rimo. 9. 60 min Mari., Indo. 10. 60 min Rimo, Indo. 11. Mari, S. 12. Rimo, S. The rats were sacrificed by ether overdose, and laparotomy and mastectomy were performed, aperture and gastric necrosis area tabulated by planimetry. Histological examination (H.E.). Statistics: Student's t test and ANOVA. Macroscopical gastric area percentage: 1. 0%; 2. 0%; 3. 0%; 4. 35 ± 5; 5. 61 ± 7; 6. 73 ± 8; 7. 11 ± 2 (< 0.01); 8. 81 ± 7 (p < 0.01); 9. 18 ± 3 (< 0.02); 10. 83 ± 7 (< 0.05); 11. 16 ± 4 (< 0.01) and 12. 91 ± 5 (p < 0.01).

Conclusions: CB1 Marihuana agonist cannabinoid receptor provided marked gastric mucosa protection; in contrast, rimonabant, CB1 antagonist, aggravated the gastric lesions induced by ethanol, indometacin and stress.

4. PROBIOTIC *Lactobacillus casei defensis* (ACTIMEL) IN FORMATION OF YOGURT WITH LIVE BACTERIA OR DEAD

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It's proved that both probiotics with live or dead bacteria has anti-inflammatory effects. Aim; study the probiotic *Lactobacillus casei defensis* (LCD) either live or dead in formation of yogurt. 4 liters of skim milk were placed in a sterile container and heated to 90°C, then left to cool to 40°C.3 groups of sterilized test tubes were prepared (n = 7), we added 100 ml of milk in every group, then in group 1 (control), with a sterile syringe and needle we added 10 ml of saline solution (0.9%); In group 2 were placed in each test tube 1, 3, 5 and 10 ml of LCD with dead bacteria (tubes heated in autoclave to 100°C for 20 minutes) colony forming units crops (CFU) were negative; Group 3, 1, 3, 5 and 10 ml of live bacteria LCD were introduced (tubes between 3°C and 8°C, crops 1.8 X 10⁶ CFU / ml). Later test tubes were positioned in a pool with water bath to 40°C. Every hour formation or not of yogurt was controlled. Results: 15 hours later in all test tubes in Group 2 containing 5 and 10 ml of dead LCD we found yogurt and crops were negative (even for *Lactobacillus*); likewise, every tube of Group 3 containing live LCD, 5 and 10 ml, formed yogurt too and crops were all positive UFC (+) (1.8 +/- 1.2 X 10⁵ CFU / ml *Lactobacillus*). In contrast, group 1 (control), followed for 24 hours, no yogurt was formed and crops were negative. We used Fisher's Test in statistical evaluation, and we found no significant difference between groups 2 and 3 in formation of yogurt (p = ns), in contrast with control group (p < 0001). Conclusion: both, live and dead LCD bacteria in probiotic formed yogurt.

5. FUNCTIONAL FOOD AND ALCOHOL CONSUMPTION IN UNIVERSITY STUDENTS

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Functional food plus diet offer benefits for health and reduce disease risks. Objective: To analyze conceptions of university students regarding consumption of "healthy food", since it was observed a higher consumption of functional food and alcohol in students that according their weight were classified as "population at risk". Methodology: Descriptive, cross-sectional study applying structured, anonym and voluntary questionnaires was performed on public and private university students, collecting socio-economic, nutritional and biological data. In a second step analysis, body mass index (BMI) was evaluated as a risk indicator, since the students are submitted to changes in life style, therefore to disorganization of familiar nutritional models. Results: 370 students, both sexes (220 females and 150 males) were submitted to the questionnaire. Fifty eight students (28 females and 30 males) were at risk. Considering weight, females had lower weight. Alcoholic beverages were consumed by 73% of the group at risk, and 37% mixed with energizers. This particular group of students presents a higher consumption of functional food and similar alcohol ingestion than the other students. Conclusions: The consumption of healthy food alone is not the only definition regarding health achievement but the utilization patterns. Low weight in women and overweight in men is associated with the body model publicized by the mass media, thus, the food is manipulated as a symbolic object in the adolescents' aims, so far. This issue leads us to continue with further studies in the cultural field.

6. SERIC LEVELS OF CREATINE PHOSPHOKINASE (CPK) IN CBI+ MICE CHALLENGED WITH INCREASING DOSES OF *Trichinella spiralis*

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Trichinellosis, caused by *Trichinella spiralis* (Ts), affects many mammals including man, in whom it is highly pathogenic. Characteristically, Ts larvae released by females in the small intestine move through blood and/or lymph to muscle where they encyst to chronicity. While encysting the parasite damages the host muscle cells, leading to high levels of cytoplasmic enzymes in blood. Our aim was to examine the effect of challenging CBI+ males with increasing doses of Ts on muscle damage, estimated by the seric levels of CPK, and to analyze its relationship with the parasite load (PL). Ninety to 110 days old mice CBI+ males (CBI-IGE colony) were challenged with oral doses of 1 (group I), 2 (group II) and 4 (group III) muscle Ts larvae per g of body weight. PL was studied in the tongue, after digestion with pepsin, on day 40±2 post-infection, in the chronic stage; it was expressed as total number of larvae (N). Seric CPK (U/l) was measured using a kinetic method (CK-NAC UV, WIENER lab). Differences between groups were analyzed with the Kruskal-Wallis test. A positive association was observed ($r_s=0.83$, $p<0.01$) between the infecting dose and PL ($\bar{x}\pm SE$; I: 426±41; II: 1300±419; IV: 3123±1001) ($p=0.034$). On the contrary, CPK levels were not associated to the dose or the parasitic load. ($\bar{x}\pm SE$; I: 256±87; II: 232±43; IV: 181±25) ($p=0.561$). The state of equilibrium between host and parasite, typical of the chronic phase of infection, might account for the lack of association between PL and CPK levels.

7. CHANGES IN THE EOSINOPHILIA OF CBI+ MICE CHALLENGED WITH INCREASING DOSES OF *Trichinella spiralis*

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Trichinella spiralis (Ts), a highly pathogenic parasite, is capable of stimulating an important immune response. Eosinophils are effector cells in parasitic infections, though their role is not completely defined. In Ts infections their parasiticide effect is mediated by specific antibodies. Eosinophilia in CBI+ mice challenged with increasing doses of Ts was analyzed to determine the effect of the doses on the response of this particular genotype. Ninety to 110 days old CBI+ males were challenged with oral doses of 1 (group I), 2 (group II) and 4 (group III) muscle Ts larvae per g of body weight. The chronicity of the infection was studied in the tongue, after digestion with pepsin, on day 40±2 post-infection (*pi*); it was expressed as total number of larvae (N). Eosinophilia in blood smears was evaluated on day -2 before challenge (healthy control, E₋₂), on day 6 *pi* (acute stage, E₆) and on day 40 *pi* (chronic stage, E₄₀). As expected, N increased when the infectant doses increased ($p=0.034$). Leukocyte counts on day 40 *pi* were similar in the three groups (median, I:5900/mm³; II:6800; IV:5900) ($p>0.05$). Overall, eosinophilia increased in the acute stage and was highest in the chronic one (E₋₂ vs E₆ and E₄₀, $p=0.0008$). These modifications were significant only in group III (median, E₋₂=1.0, E₆=1.3, E₄₀=7.1, $p=0.023$). Since tissue helminths usually induce high eosinophilias, the results in this study were the expected. However, the high eosinophilia developed by group III was insufficient to decrease the number of larvae that survived to encyst.

8. HISTOPATHOLOGY OF BREAST TUMORS IN TWO LINES OF MICE OF THE CBI-IGE STOCK, DIFFERING IN SUSCEPTIBILITY TO SPONTANEOUS CARCINOGENESIS

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Animal models of cancer are widely used to study the biology of breast cancer. Our aim was to study the histologic phenotype of mammary tumors in two lines of mice of the CBI-IGE stock, differing in susceptibility to spontaneous mammary carcinogenesis and associate it to the host genotype. Females of the *susceptible* line CBI+ develop tumors before age 360 days (median 243 days) with a high incidence (99.9%), and evinced an exogenous MMTV variant. CBI/C was *resistant* (median 504 days, incidence 25.0%) and did not have an exogenous MMTV. Females from both genotypes (n=113) were sacrificed when the tumor reached the maximum permitted size or their health deteriorated. Tumors were classified according to Dunn's classification. The dominant histological pattern defined the phenotype, since most tumors showed complex patterns. Fifty two CBI+ tumors were examined: the commonest pattern was type B (76.9%), showing mainly areas with proteinaceous material (42.5%). All CBI/C tumors analyzed (n=10) were type B; 30% were subtype scirro. Tumors type C were not observed in any of the mice studied. Most tumors showed a mixed pattern, suggesting over-expression of several oncogenes. Though both lines had the same major histotype, they differed in the subtypes observed. Subtype scirro is very common in human cancers, but the phenotypes described by Dunn are infrequent. Since type scirro has not been described either in MMTV or carcinogen-induced

9.

ALTERATIONS OF THE VISCOSITIES IN BLOOD, PLASMA AND WHEY IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)

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The aim of the present research was to compare the viscosities of blood (η_b), plasma (η_p) and whey (η_s) in a group of 26 women (39±9 years old) with SLE to 20 controls matched for sex and age. Besides the differences between plasmatic fibrinogen (F) and immunoglobulins (Igs) were determined, analyzing their influence on different viscosities. Measurements were made with a Wells-Brookfield LVT-CP rotational viscosimeter at speeds of 230 s-1. F was measured with gravimetric method and Igs with Radial immunodiffusion. For the statistical analysis the t of Student and the coefficient of Pearson's were used. We found that women with SLE have shown significantly higher values with regard to controls, in: F mg/dl (340±87 vs 280±47, p<0.005), Igs mg/dl (1763,94±51 vs 1411.77±219.46, p<0.05), η_b (4.40±0.34 vs 4.15±0.18, p<0.05), η_p (1.74±0.20 vs 1.48±0.04, p<0.001) and η_s (1.59±0.16 vs 1.33±0.09, p<0.001). Positive correlations were found between η_p and F (r=0.42, p<0.05), η_s and Igs (r=0.60, p<0.05), η_s and η_p (r=0.92, p<0.0001), η_p and η_b (r=0.92, p<0.0001). On the basis of these results we concluded that the increase in the blood viscosity might be associated with changes in plasmatic viscosity and the latter with the concentration of F and the viscosity of whey. In addition the Igs are major determinants of the increase in the viscosity of whey found in patients with SLE.

10.

EFFECTS OF PLASMATIC FACTORS OVER ERYTHROCYTE AGGREGATION IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)

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This work studied the erythrocyte aggregation (EA) and plasmatic concentration of fibrinogen and immunoglobulins in 26 women (39± 9 years) with SLE and 20 healthy ones. The EA was estimated measuring the variation in the time of the light transmitted through a sample of entire blood, determining 2 parameters: s_0/n_0 that estimate the aggregation average size and $2k_2n_0$ that estimate the process initial speed. F was measured by gravimetric method and immunoglobulins by radial immunodiffusion. For the statistic analysis, was used Student's t and Pearson's correlation coefficient. The results shown that women with SLE presented significantly higher values respect control women: s_0/n_0 (1,89 ± 0.06 vs 1,80 ± 0.07, p<0.002), $2k_2n_0$ (1.14 ± 0.75 vs 0.75 ± 0.61, p<0.05), plasmatic fibrinogen in mg/dl (340 ± 97 vs 280 ± 47, p<0.005), and immunoglobulins in mg/dl (1763,94 ± 51 vs 1411.77 ± 219.46, p<0.05). Besides, a positive correlation was found between: fibrinogen and $2k_2n_0$ (r=0.60; p<0,01); fibrinogen and s_0/n_0 (r=0,52; p<0,02); immunoglobulins and $2k_2n_0$ (r=0.47; p<0,05); immunoglobulins and s_0/n_0 (r=0,40; p<0,05). This results indicate fibrinogen and immunoglobulins as possible responsible for the size increase in aggregation and erythrocyte aggregation speed in this patients. The increase in eritrocitary aggregation could have certain influence in tromboembolic process seen in patients with SLE.

11.

SOYBEAN BRAN: EFFECTS ON BODY WEIGHT IN OBESE ADULT RATS

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Functional foods provide beneficial health effects added to their usual nutritional properties. Fiber rich products are one of the widely accepted as functional foods due to their established physiological effects. Soybean bran presents a high concentration of both soluble and insoluble fiber thus offering an interesting field of investigation as an eventual component of functional foods.

The aim of this work was to compare body weight progress and food efficiency conversion in obese β line rats fed two different diets containing either soybean bran (insoluble and soluble fiber) or microcrystalline cellulose (insoluble fiber).

Sixteen 200 days old obese male β rats, were fed a basic diet containing as fiber either 10g/100g of soy bran (group S) or 10g/100g of microcrystalline cellulose (group C) for 60 days. Food intake and body weight were registered every other day. Food efficiency conversion was calculated as the quotient: body weight gained / total food intake.

Body weight gain (g): S: 64.9 ± 9.7, C: 51.0 ± 6.3 (p> 0.05)

Total food intake (g): S: 988.3 ± 47.9, C: 1018 ± 37.1 (p> 0.05)

Food efficiency conversion: S:5.95±0.64, C:4.99 ± 0.61 (p> 0.05)

In these adult β rats, dietary soluble fiber provided by soy bran did not add extra beneficial effects to those attributable to insoluble fiber provided by cellulose, neither in satiety -similar food intake- nor in body weight progress. Probably, dietary soluble fiber effects might be reflected in other metabolic variables related to obesity comorbidities.

12.

EFFECT OF ASCORBIC AMPHIPHILIC DERIVATES ON ERYTHROCYTE MEMBRANE

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The aim of the present paper was to study if the loss of the deformability (ED) and the increase of the osmotic fragility of the erythrocyte owing to ascorbic amphiphilic derivates of different alkyl chain length (ASCn: ASC8, ASC10 y ASC12) become of the membrane lipid peroxidation (LP). The concentrations tested were: the critical micelar concentration (CMC) [concentration at which the surfactant molecules begin to form aggregates]and two hemolytic concentrations (CH10 y CH50: concentrations producing 10% and 50% hemolysis respectively). After incubating the red blood cells (RBC) extracted from healthy donors at 37° for 60 minutes in PBS (control) or PBS added with ASC8, ASC10 y ASC12 at the mentioned concentrations it was determined: a) RBC deformability by its inverse function: the rigidity index (RI), which has been obtained from the flow time for 1 ml of RBC suspension passing through the filter 5µm pore size and b) the grade of LP for TBARS. For statistic análisis was utilised t of student and the Spearman coefficient. The results showed: for the 3 ASCn, the IR and TBARS values for CMC concentrations did not significantly differ from the control values, although for litic concentratios, the IR and TBARS values were significantly higher and were positively correlated. We conclude that the LP is one of the mecanism which explain that the ASCn in concentrations > CMC, interact with the membrana impairing ED and increasing osmotic fragility.

13. EFFECT OF MONOFLUOROPHOSPHATE (MFP) AND ZOLEDRONATE (Z) ON BONES FROM RATS WITH OSTEOPOROSIS (OP) INDUCED BY OVARIECTOMY (OVX)

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OVX-induced-OP is characterized by a decrease in bone mass with increase in bone remodeling. MFP and Z are used for the treatment as osteogenic and antiresorptive drugs, respectively. The aim of this work was to compare the effect of both drugs in female 70-day-old Sprague Dawley rats with OVX-OP. Four groups of 8 rats each were subjected to OVX, 1) Controls, 2) MFP: 40 $\mu\text{mol}/100 \text{ g bw/d}$ per os, 3) Z: 1.5 $\mu\text{g}/\text{kg/w sc}$, 4) MFP+Z: 40 $\mu\text{mol}/100 \text{ g bw/d}$ per os + 1.5 $\mu\text{g}/\text{kg/w sc}$. Eight rats were sham-operated (sham). After 30 days rats were euthanized, femurs and tibias were obtained. Dry weight of femur (mg)/100 g body weight was obtained as estimator of bone mass. Percentage of trabecular bone was histomorphometrically measured in the metaphysis of tibia. Data were compared with Kruskal Wallis and Dunns' test. Z prevented the loss of bone mass induced by OP (Sham:142 \pm 3, control:122 \pm 3*, MFP:122 \pm 3*, Z:128 \pm 5, MFP+Z:128 \pm 5,* indicates differences compared to sham, $p < 0.05$, mean \pm SE. Histomorphometrically, a decrease in trabecular bone was observed after OVX and Z prevented the decrease (Sham:33.9 [33.4-42.3]; OVX:22.6[18.2-30.7], MFP:16.2[13.9-21.9], Z:54.0[24.5-58.4], MFP+Z:48.7[32.9-70.5], $p < 0.05$, median[range]. In spite of the known osteogenic effect of MFP, it did not prevent the OP induced by OVX. In contrast, Z prevented the decrease in bone mass and percentage of trabecular bone, independently of the presence of MFP.

14. THE REMNANT KIDNEY PREPARATION AS A MODEL FOR STUDYING THE METABOLISM OF GLUCOSE IN RATS AFFECTED BY FLUORIDATED WATER

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The effect of 5/6 nephrectomy (remnant kidney model) on glucose metabolism in rats is contradictory. This model was chosen to study the effects of fluoride (F) on glucose metabolism in rats with chronic renal failure. Fluoridated water is supply to humans for the prevention of tooth decay. A decrease in renal function would produce plasma F accumulation and side effects of F, such as the decrease in insulin secretion, could arise. Male 50-day-old Sprague Dawley with 5/6 nephrectomy was chosen as model of renal insufficiency to study the effects of consuming fluoridated water on glucose metabolism. The aim of this work was to assess whether nephrectomy modify glucose metabolism. Eight rats were subjected to 5/6 nephrectomy (NX) and 8 rats acted as controls (C). Blood urea levels, creatinine clearance, urinary flow and density were measured as markers of renal insufficiency. Basal glycemia was measured every 15 d and after 60 d an intraperitoneal glucose load was performed (2.5 ml glucose 10%/100 g bw) measuring glycemia after 30 and 120 min. Comparisons between groups were done with unpaired Student's t test and differences were considered significant when $p < 0.05$. Nephrectomy did not modify basal glycemia throughout the experiment and values were not different from controls. Glycemia after glucose load did not differ between NX and C. It is concluded that the metabolism of glucose is not modify by 5/6 nephrectomy in male-50-day-old Sprague Dawley rats, making the remnant kidney model useful for studying the effect of fluoridated water intake on glucose metabolism in rats with chronic renal failure.

15. MORPHOMETRIC STUDY OF BONES FROM RATS TREATED WITH MONOFLUOROPHOSPHATE (MFP) AND SODIUM FLUORIDE (NaF)

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Both MFP and NaF increase bone mass although they have pharmacokinetic differences. While only fluoride is present in plasma after an oral dose of NaF, fluoride bound to albumin is also present when administering MFP. The objective of this work was to study the osteogenic effect of MFP and NaF in trabecular and cortical bone. Four 21-day-old-female IIM/Fm rats orally received 80 $\mu\text{mol F/d}$ (group F), 4 rats (group MFP) received 80 $\mu\text{mol MFP/d}$ and 4 rats acted as control. Rats were killed after 30 d and histomorphometry was performed in the tibia at the level of the metaphysis. Trabecular bone volume (%), trabecular thickness (μm) and trabecular number (1/mm) were measured. Area of cortical bone (mm^2), periosteal perimeter, endosteal perimeter and cortical thickness were measured in a cross section of the diaphysis. Results are expressed as mean \pm SE and comparisons were done with ANOVA and Bonferroni post-test. Differences were considered significant when $p < 0.05$. * indicates differences compared to control. Endosteal and periosteal perimeters were higher in MFP group, without differences in the cortical area. Trabecular bone volume was higher in rats treated with NaF and MFP (control:22.1 \pm 2.7, F:35.2 \pm 8.2*, MFP:33.3 \pm 7.1*). The same was observed in trabecular number (control:8.9 \pm 0.8, F:11.6 \pm 2.2*, MFP:11.7 \pm 2.0*) and trabecular thickness (control:24.9 \pm 1.9, F:30.3 \pm 4.8*, MFP:29.1 \pm 2.9*). Conclusion: the treatment with NaF and MFP increased bone mass in growing rats by increasing trabecular bone but not cortical bone. However, biomechanical differences between treatments can be predicted on the basis of changes in distribution of cortical bone.

16. IN VITRO EFFECT OF DIFFERENTS CONCENTRATIONS OF PROANTOCYANIDINE-ENRICHED EXTRACTS OF *Ligaria cuneifolia* (Lc) ON ERYTHROCYTE SHAPE AND OSMOTIC RESISTANCE

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We showed that both *Lc* crude extract and methanolic fraction decrease of erythrocyte morphological index and increase osmotic resistance. Objective: To analyze the *in vitro* effect of different concentrations of proanthocyanidine-enriched extracts of *Lc* on erythrocyte shape and osmotic resistance. Methods: Blood samples from male adult Wistar rats were divided into: one Control (C) (n=8), and four proanthocyanidin-treated (T): 0.1 (T1) 1.00 (T2) 2.00 (T3) and 3.64 (T4) (n=8 each one), incubated: 30 min, 37°C. Results (mean \pm SD): Osmotic fragility: erythrocytes were incubated for 30 min in NaCl solutions of concentrations ranging from 0 to 290 mOsm/kg. Hemolysis vs NaCl concentration curves were made and X50 (concentration of NaCl which produces 50% of hemolysis) (mM) and b (degree of homogeneity) were determined. X50 : C: 0.45 \pm 0.01; T₁: 0.44 \pm 0.02; T₂: 0.44 \pm 0.01; T₃: 0.50 \pm 0.01*; T₄: 0.54 \pm 0.02*. b: C: 11.74 \pm 0.69; T₁: 9.79 \pm 0.42; T₂: 10.46 \pm 0.47; T₃: 9.22 \pm 0.43*; T₄: 7.72 \pm 0.54* (* $p < 0.05$ vs. C). Morphological index (MI, microscopy and Bessis classification, Σ [shape index x number of cells/total number of cells]): C: -0.49 \pm 0.03; T₁: -0.62 \pm 0.07; T₂: -2.64 \pm 0.28*; T₃: -2.14 \pm 0.35*; T₄: -1.26 \pm 0.10* Stomatocytes III (%): C: -2.62 \pm 0.95; T₁: -10.75 \pm 3.01*; T₂: -14.44 \pm 2.42*; T₃: -54.22 \pm 2.21*; T₄: -14.02 \pm 1.29* (* $p = 0.05$ vs. C). Conclusion: Proanthocyanidin-enriched extract of *Lc* induces a discocyte-to-stomatocyte III change and increase osmotic resistance at higher concentrations.

17. METRONOMIC CHEMOTHERAPY (MCT) WITH DOXORUBICIN (DOX) AND CELECOXIB (CEL) INHIBITS THE GROWTH OF M-406 MURINE MAMMARY ADENOCARCINOMA

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MCT consists of a chronic, equally spaced, administration of low doses of different chemotherapeutic drugs without extended rest periods. DOX inhibits topoisomerase II enzyme, preventing DNA replication. CEL is a selective COX-2 inhibitor of cyclooxygenase-2 (COX-2) with antiangiogenic properties. We have demonstrated the antitumoral effect of MCT with DOX in the mouse mammary adenocarcinoma tumor model M-234p. The goal of this work was to study the antitumoral effect and toxicity of metronomic administration of DOX plus CEL in the M-406 tumor model. CBI mice were s.c. challenged on day 0 with M-406 and on day 8 distributed in four experimental groups: GI no treatment (controls); GII DOX 1mg/kg i.p. 3 times/week; GIII CEL 60 mg/kg p.o. 5 times/week; GIV Treated as II + III. Tumors were measured and animals were weighted twice a week. Mice on group IV showed lower tumor volume on day 28 (Mean ± SEM: 969 ± 286 mm³) than those of group I (4522 ± 1978 mm³) (p=0.05). GII values (1969 ± 386 mm³) were also lower than GI (p=0.07). The survival of mice from group IV was higher than that of control mice. There were no significant weight losses caused by either treatment. In conclusion, the combined DOX + CEL MCT in M-406 tumor-bearing mice: a) inhibited tumor growth, b) was more efficient than treatment with either agent alone, c) increased the survival rate and d) was devoid of general toxicity.

18. MODULATION BY MAFOSFAMIDE OF THE IL-10/IL-10R SYSTEM IN NB2 RAT LYMPHOMA CELLS

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We have previously demonstrated that Mafosfamida (Maf), a compound that yields *in vitro* the same active metabolites that Cyclophosphamide does *in vivo*, inhibited the *in vitro* proliferation of lymph node metastatic cells from L-TACB (rat B cell lymphoma) bearing rats. Also, Maf negatively modulated IL-10 receptor (IL-10R) expression and IL-10 secretion. Our current aim was to investigate the regulation system IL-10/IL-10R in another type of lymphoma. Nb2 cells (rat T cell lymphoma cell line) were used. Cell suspensions from Nb2 cells were prepared. Cells were incubated with 0, 2.5, 5 and 10 μM Maf in RPMI + 10% FCS and after 60 h, conditioned media (CM) were obtained. Cell proliferation (WST-1 colorimetric assay) was significantly inhibited by Maf (p<0,001, ANOVA) in either dose utilized. IL-10 concentration (ELISA) in Nb2 control cells CM was 151±37 pg/ml (mean±SEM); Maf treatment caused a decrease in IL-10 production (Maf 10 μM = 56±20 pg/ml) (p<0,05). IL-10R expression (CELISA) was significantly decreased by 2.5 μM Maf (p<0,05), respect to control cells. We conclude that Nb2 cells, like L-TACB metastatic cells, are also sensitive to Maf which down regulates the IL-10/IL-10R autocrine regulatory system. These results suggest that IL-10/IL-10R system would be in part responsible for the proliferation control in Nb2 cells and that this action can be modulated by treatment with Maf.

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19. FAT ACID DIET AND ITS INFLUENCE IN LINE β RAT GLUCOLIPIDIC PROFILE VARIABLES

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Food does not escape globalization effect. An example of this is the poor diversity of vegetable food. This has produced that both human and animal diets are excessive in AGω6 and insufficient in AGω3 (relation 20:1). This off balance predisposes, among other factors, to the increase of pathologies such as: cardiovascular illness, diabetes and obesity. The effect of chia seed adding (non traditional vegetal food and rich in ω3) as supplement of male β obese and diabetic rat line habitual diet was evaluated. Chia seed tasting was measured and glucolipidic profile in male 200 day rats fed during 60 days with habitual food (C) (n=5) and habitual food+chia seeds (C+Ch) (n=7) was compared. Values at the beginning, 30 and 60ds of treatment were registered. Values were analyzed: basal glycemia (Gli₀), and after 120' glucid over weight (Gli_{120'}), triglyceridemia (TG), cholesterolemia, biomass, adipose panicle relative weight (APRW), daily total consumption (DTC) and habitual food consumption (HFC). At 30 and 60 days values are lower when animals eat chia. E.g: 30 days: Gli_{120'} (g/l): (C) 2.06±0.13 vs (C+Ch) 1.39±0.12 (p:<0,01); TG(g/l): (C) 3.40±0.39 vs (C+Ch) 2.47±0.21 (p:0,05). 60 days: Gli_{120'}: (C) 2.10±0.06 vs (C+Ch) 1.67±0.07 (p:<0,01); TG: (C) 2.97±0.20 vs (C+Ch) 1.71±0.17 (p:<0,001). It exists difference (p>0,05) in biomass, (DTC) and (HFC) among groups. The latter is lower in (C+Ch), showing that seed was well accepted. (APRW) is higher in (C+Ch)(p:<0,05). It must be still evaluated (C+Ch) at different ages and for a long time, to observe the β rat analyzed variable evolution. This pathology is installed at peripuberal time and ends as spontaneous obesity and diabetes animal model.

20. CROSS-SECTIONAL ANALYSIS OF HEMATOCRIT IN EXPERIMENTAL POPULATIONS OF CAMPERO CHICKEN WITH THE SAME PROPORTIONS OF CORNISH GENES

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Packed cell volume or hematocrit (H) is a variable easy to measure and its modification represents one of the adaptative responses to the high requirement of oxygen imposed by the increased metabolic demand that the intensive selection for rapid growth has fixed in the commercial broiler chickens. Campero INTA is a meat type chicken, with a growth rate lower than that of the commercial broiler strains. As White Cornish is the breed used as the paternal genotype in commercial broilers, the aim of this work was to evaluate the behaviour of H in males of two experimental population: Caseros I [paternal CP (White Cornish x Barred Plymouth Rock) and maternal CR (White Cornish Blanco x Rhode Island Red)] y Caseros II [paternal CR x maternal CP] and in a reference genotype Campero INTA. H was determined at 1, 2, 4, 5, 8, 9, 10 y 11 weeks of life, in samples collected before euthanasia. The effects of age (F = 8.11; P<0.0001) and genotype (F = 4.51; P = 0.01) was difficult to assessed because of a significant genotype x age interaction (F = 2.92; P = 0.0008), possible ascribed to random oscillations of H values with age. It is concluded that the inclusion of 50% of Cornish genes in both experimental populations do not produce a significant metabolic stress as evaluated by H values.

21. TRANSVERSAL ANALYSIS OF ABSOLUTE AND RELATIVE ABDOMINAL FAT CONTENT IN TWO EXPERIMENTAL POPULATIONS OF FREE RANGE BROILERS WITH 50% OF CORNISH GENES

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Absolute and relative [(fat weight/eviscerated body weight) x 100] abdominal fat content behaviour in males of two experimental populations of free range broilers with 50% of Cornish genes: Caseros I [CP (White Cornish x Plymouth Rock Barrado) males x CR (White Cornish x Rhode Island Red) females] and Caseros II [CR (Cornish Blanco x Rhode Island Red) males x CP (White Cornish x Plymouth Rock Barrado) females] and in the reference genotype (Campero INTA), was studied after serial slaughtering between the first and fifth week and seventh and twelfth week of age. The effects of age, genotype and (age x genotype) interaction were studied by means of an analysis of variance corresponding to a 10x3 factorial experiment (ten ages x three genotypes). A significant effect of age (F=32.4; P<0.0001), of genotype (F=12.36, P<0.0001; Caseros II>Caseros I>Campero INTA) and of the genotype x age interaction (F = 3.73; P<0.0001) was observed. Results show that the inclusion of Cornish genes in the populations proposed as an alternative to Campero INTA does not show unwanted effects on body fat deposition estimated by abdominal fat behaviour. Such response would not be independent from the genetic strategy used to produce these experimental populations as they showed significant differences in fat content.

22. GROWTH PATTERN AND MUSCLE-BONE RELATIONSHIPS IN A MOUSE (*Mus musculus*) SEGREGATING POPULATION

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Muscle-bone relationships were studied in a mouse segregating population (F2) derived from crossing two lines divergently selected for body conformation: CBi/C (high body weight-short skeleton) and CBi/L (low body weight-long skeleton). Mice (250 males and 250 females) were distributed in four groups (G) according to their asymptotic body weight (A) and maturing rate (k) values estimated with a Gompertz model (high A and k; high A–low k, low A–high k, low A and k). Group effect on femur length and weight, tibia length and weight and triceps surae muscle weight were assessed by means of a one way ANOVA. Animals with high k values showed heavier bones with the same length and muscles with the same weight than mice with low k values irrespective if maturing rate were accompanied by high or low A values. Males and females showed a similar behavior. It is concluded that maturing rate affected bone weight. Animals that at the slaughter fixed age of 150 days were closer to their asymptotic body weight (high k values) showed heavier but not longer bones than those with low k values. Hooper proposed that “the increased tension generated by the longitudinal growth of a bone brings about an increase in the mass of the muscles attached to it”. According to this hypothesis and in coincidence with bone length behavior, muscle weight was not affected. The heavier bones of mice with high k values result from their higher maturity as this response was evident either for high and low A animals and was independent of bone length and muscle weight two traits with similar mean values in mice with different mean maturing rate but the same asymptotic weight.

23. INTAKE AND BIOMASS AT DIFFERENT AGES IN TWO DISMETABOLIC SUNFLOWER SUPPLEMENTED RAT LINES

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The effect of sunflower seeds as supplement of diet that receives the inbred obese and diabetic β line and IIMb glucose intolerant line was evaluated (n=32). The rats were fed with balanced food(C) or balanced+sunflower(C+G) since weaning. At 50, 100, 200 and 300 days old(ds) biomass and daily intake(DI) were measured and daily caloric intake(DCI), food conversion efficiency(FCE) and adipose panicle relative weight(APRW) were calculated. (C+G) biomass was higher compared with (C) (p>0.05). In both lines, weight progress was up to 300ds in which it descended due to diabetes progress. At 100ds, when β consumed (C+G) it looked quicker satisfied and DI(g/day) lowered. IIMb DI did not vary with (C+G): β (C)31.22±1.19 vs β (C+G)22.72±0.99 vs IIMb(C)21,66±0.62 vs IIMb(C+G)20.80±1.11(p<0,001). In agreement with this an DCI(kcal/day) higher was produced in β and IIMb with (C+G) up to 100 and 200ds, to be leveled at 300ds. At 300ds DCI does not differ between lines and groups. At 50ds IIMb FCE was higher vs β with (C) or (C+G)(p<0.01). Since 200ds negative values were produced showing a weight loss. With (C+G) FCE was less(p<0.05) for both lines. ECA 300ds: β (C)-0.01±0.01 vs β (C+G)-0.23±0.03 vs IIMb(C)-0.06±0.01 vs IIMb(C+G)-0.14±0.07(p<0.01). APRW differs (p<0.001) in both lines with (C+G). A diet rich in fat acids $\omega 6$ or higher fat acid relation $\omega 6/\omega 3$ would produce the highest fat deposit. Due to the effects of genetic-environmental interactions on β and IIMb variables, sunflower supplement will not be given in an intensive way in the future, but once a week.

24. BIOMASS AND VARIABLES OF THE GLUCOLIPIDIC PROFILE IN A SUPPLEMENTED DIET. ANSWER OF β AND IIMb RATS AT DIFFERENT AGES

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Sunflower seeds were used as diet supplement in obese-diabetic β line and intolerant to glucose IIMb one. Males (n=32) fed since weaning with balanced food(C) or balanced+sunflower(C+G) at 50, 100, 200 and 300 days were compared. Basal glycemia(Gli₀) and (Gli₁₂₀), triglyceridemia, cholesterolemia, adipose panicle weight and biomass were analysed. If eating (C+G) basal glycemia in both lines and at all ages is higher. In β (C+G) rises diabetes from 100 days. In both diets glycemia values are leveled at 300 days. In IIMb exists early glycid intolerance and (C+G) plus age deepen this. Comparing glycemia between lines, there is a difference (p>0.05) in β favour at all ages. Eg.100ds: Gli₀: IIMb(C)1,12±0,04 vs IIMb (C+G)1,39±0,03 vs β (C)1,52±0,10 vs β (C+G)1,80±0,10 (p<0.001); Gli₁₂₀: IIMb(C)1,32±0,10 vs IIMb(C+G)1,57±0,11 vs β (C)1,86±0,17 vs β (C+G)3,30±0,27 (p<0.001). β hipertriglyceridemia(g/l) lowers with (C+G): 100ds: IIMb (C)0,39±0,08 vs IIMb (C+G)0,45±0,10 vs β (C)2,28±0,43 vs β (C+G)0,98±0,18 (p<0.001); 200ds: IIMb(C)0,29±0,09 vs IIMb (C+G)0,24±0,07 vs β (C)3,84±0,28 vs β (C+G)0,97±0,19 (p<0.001); 300ds: IIMb(C)0,55±0,07 vs IIMb(C+G)0,38±0,07 vs β (C)1,86±0,13 vs β (C+G)0,73±0,14 (p<0.001). In both lines, (C+G) tends to improve lipidic profile. Biomass values are higher with (C+G) (p>0.05), this is shown in the adipose panicle weight with difference (p<0.001) in β and IIMb. The supplement must not extend to the whole diet intensively because model values are moved. Seed adding to maintain biomass is nowadays done with sunflower supplement once a week.

25.

THE ADRENAL GLANDS DURING THE EARLY HUMAN FETAL PERIOD*Tellez TE, Carrera LI, D'Ottavio AE.**Histology and Embryology. Medicine and CIUNR, UNR.*

Studying adrenal glands during the early human fetal period, of noticeable hormonal relevance, serial sections (7 μ m thick) were obtained from the abdominal zone of 9th and 10th weeks-old human fetuses. Specimens underwent histological and histochemical techniques and were later exposed to planimetry and spatial reconstruction. Two voluminous retroperitoneal oval masses appeared in the lumbar region, bilateral to the middle axis, closely related to the metanephros, and in contact with the paravertebral ganglia. A thin external sheath and three internal zones could be histologically distinguished. (a) a thin subcapsular peripheral cortex (rich in compacted cells); (b) a spongy-like fetal cortex, occupying most of the organ, with cavities showing sinuous anastomosed capillaries, and (c) the medulla, its innermost area. The first zone evidenced several sheaths of small cells (few cytoplasm and heterochromatic nuclei) and minimal vascularization. The second one revealed big polygonal cells with acidophilic and faintly PAS (+) cytoplasm and euchromatic nuclei. Its important vascularization was formerly mentioned. The medulla had thin cellular trabecules divided by dilated vascular spaces. Finally, the fibrillar support (Collagen III) was reduced to the external sheath and the perivascular spaces. The limited development of the peripheral cortex may be attributed to the studied period whilst the big one in the fetal cortex may be due to its relevant hormonal function carried out in these weeks.

26.

AUERBACH PLEXUS NADPH+ NEURONAL COUNT IN YOUNG AND MATURE RATS IN A OBESE AND DIABETIC LINE VS. SPRAGUE-DAWLEY RAT*Geuna J¹, Leiva M², Racca L², Hisano N¹.**¹Cátedra de Histología y Embriología, Facultad de Ciencias Médicas. ²Cátedra de Estadística, Facultad de Ciencias Bioquímicas U.N.R. E-mail: jesygeuna@hotmail.com*

NO is a inhibitory neurotransmitter in mammals ENS. Histochemically NADPH reveal presence of NOS (nitric oxide synthase) activity in neurons. Male β and S-D (Sprague-Dawley) rats of 4 and 18 months old were euthanized with ether overdose. Jejunum, proximal and distal colon were dissected out and fixed in 4% paraformaldehyde in PBS. Histochemically processed with nitroblue tetrazolium and NADPH. NADPH+ neurons were microscopically counted under a graticulated ocular in 40 fields. Neurons/mm² are expressed as media \pm SEM. SD: 1- jejunum, 4m: 27.20 \pm 1.30/mm²; 18m: 27.10 \pm 1.20/mm² (n.s.); 2- proximal colon, 4m: 44.20 \pm 2.10/mm²; 18m: 35.00 \pm 2.10/mm² (n.s.); 3- distal colon, 4m: 34.00 \pm 1.50/mm²; 18m: 18.60 \pm 0.90/mm². β : 1- jejunum, 4m: 56.80 \pm 0.90/mm²; 18m: 32.90 \pm 1.10/mm² (P<0.05); 2- proximal colon, 4m: 60.50 \pm 0.80/mm²; 18m: 10.50 \pm 0.50/mm² (P<0.05); 3- distal colon, 4m: 66.20 \pm 1.10/mm²; 18m: 35.10 \pm 0.90/mm². Statistical analysis from jejunum and proximal colon were done with ANOVA and LSD. No difference were detected in β distal colon. Neuronal diminution in β aged rats may be due to metabolic disorders enhanced by genetical factors.

27.

STRONTIUM EFFECT IN SIALOPROTEIN CONTENT IN OVARIECTOMIZED RATS*Chapo G, Fernández M, Morosano M, Tarrés M, Montenegro S, Caferra D.**Cát. Quím. Biológica. Fac. Cs. Médicas. UNR. E-mail:**gfchapo@hotmail.com*

It has been reported that strontium (Sr⁺⁺) enhances the continuous bone formation and decreases resorption when administered to ovariectomized rats. Previous experiences in rats allowed us to consider sialoproteins of the non collagenous bone matrix useful as bone formation marker.

Objective: to check the influence of daily treatment with a strontium salt on sialoprotein content in ovariectomized rats (Ox). Gonadectomy was performed in 16, 90-day-old Sprague-Dawley rats divided in three groups: 4 Control Ox (C), 6 Ox under strontium chloride (Cl₂Sr) 45 days from ovariectomy (Ox1), and 6 Ox under Cl₂Sr since surgery (Ox2). Cl₂Sr 30mM solution was given as drinking water, average dose of 2.5 mmoles of Sr/day/kg. Ninety days after surgery all the animals were sacrificed and tibiae and femurs were dried and minced in order to determine sialoproteins content. The amount of sialic acid in Ox2 compared with C was significantly increased (p<0,05). Animals in Ox1 showed intermediate values, not different from the other two groups. The results in mg of sialic/g of bone are (average \pm DS): C:2,79 \pm 0,27, Ox1:3,06 \pm 0,26, Ox2:3,76 \pm 0,64. Conclusion: Cl₂Sr treatment increases sialoprotein content when immediately administered after ovariectomy and can be used as a marker for bone formation stimulated by strontium.

28.

ERYTHROCYTE DEFORMABILITY AND CELL - CELL INTERACTION: EFFECT UPON BLOOD VISCOSITY*Bollini A, Hernández G, Bazzoni G, Rasia M.**Cát. de Biofísica. Fac. Cs. Médicas. UNR.*

Erythrocyte suspensions viscosity depends on medium cell properties (deformability and aggregation, ED and EA respectively) We investigated ED influence upon human and bovine blood viscosity. Bovine RBCs (RBC_b) do not aggregate in comparison with human ones (RBC_h). RBCs saline with and without glutaraldehyde 1% suspensions ranging from 5-60% were prepared. η measurements saline (η_{SF}) and saline plus glutaraldehyde (η_G) were performed at 37°C in cone-in-plate viscometer. (230s⁻¹ for suspensions shear rate) ED was measured by filtration and we informed filtration index (IF) (FI = 1/ED) Statistics: Student t test for unpaired data. Results: Human η_{SF} : 1,08 \pm 0,03 (Hto 5%); 1,56 \pm 0,03 (Hto 20%); 2,88 \pm 0,06 (Hto 40%); 4,68 \pm 0,21 (Hto 60%). Bovines η_{SF} : 1,06 \pm 0,04 ns (Hto 5%); 1,61 \pm 0,06 ns (Hto 20%); 3,96 \pm 0,45 ** (Hto 40%); 5,3 \pm 0,15 * (Hto 60%). η_G : Humans: 1,06 \pm 0,11 (Hto 5%); 1,56 \pm 0,10 (Hto 20%); 2,88 \pm 0,19 (Hto 40%); 5,83 \pm 0,81 (Hto 60%). Bovines: 1,08 \pm 0,18 ns (Hto 5%); 1,63 \pm 0,26 ns (Hto 20%); 2,92 \pm 0,28 ns (Hto 40%); 6,14 \pm 1,72 ns (Hto 60%). IF en SF: GRh: 6,95 \pm 0,5, GRb: 7,86 \pm 0,7, p<0,05. FI for SF+Glut in both species is undetermined. In both species RBCs have same shape but humans have more cellular volume than bovine ones. At the same Hto, number of cells is higher for bovines. Considering that volume and number of cells are balanced, suspensions η allow us to estimate the effect of ED upon suspensions η . Human suspensions show a minor η at physiological hematocrits when cellular interaction is important. By using RBCs hardened with glutaraldehyde and suspended in saline, the effects exerted by ED and AE are eliminated and no differences was found between species.

29. BODY CONFORMATION AND MUSCLE-BONE RELATIONSHIPS IN A MOUSE (*Mus musculus*) SEGREGATING POPULATION

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Muscle-bone relationships were studied in a mouse segregating population (F2) derived from crossing two lines divergently selected for body conformation: CBi/C (high body weight-short skeleton) and CBi/L (low body weight-long skeleton). Mice (250 males and 250 females) were assigned to four groups (G) according to their asymptotic body weight (W) and their asymptotic tail length (T), both of them estimated with a Gompertz model (high W and T; high W-low T, low W-high T, low W and T). Group effect on femur length and weight, tibia length and weight and triceps surae muscle weight were assessed by means of a one way ANOVA. Animals with high W showed similar values ($P>0.05$) for the five muscle-bone traits irrespective of their T values. Animals with low W and high L showed greater values ($P<0.05$) of the five traits than mice with low W and low L. The same responses were evident in males and females. It is concluded that with a low biomass to sustain (low W values) data corroborate Hooper hypothesis as "the increased tension generated by the longitudinal growth of a bone brings about an increase in the mass of the muscles attached to it". According to this hypothesis mice with a long skeleton (high L values) showed longer femurs and tibias and heavier muscles than animals with a short skeleton (low L values). As comparisons between mice with high or low L values were made at a similar mean body weight (high or low W values) bones of high L animals were heavier because they were longer and as a consequence of their length they also support a heavier muscle than low L mice.

30. HISTOLOGICAL SIMULATION OF THE DIGESTIVE TRACT

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This work, which is a continuation of previous ones, is about an interactive method that allows making histological differential diagnosis.

Its objective is the design of a histological simulation of the digestive tract, presented as an informatic program. It is directed to students of the first year of the School of Medicine and it intends to assess the application results.

This programme was designed with FrontPage 2003, and it includes formal realism, simplicity and availability, as well as a dynamic structure that allows the student to go through several "histological preparations" in a short time.

Results: the time employed in the development of the simulation was 20 minutes with a Standard Error of 3, to get the 70% that was required to pass. At the end of the 45 minutes lesson, all of the students had been able to complete the differential diagnosis.

31. HISTOPATHOLOGIC STUDY OF PANCREAS AND KIDNEY IN MALES OF TWO AGES OF A DIABETIC AND OBESE LINE OF RATS

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β rat, bred originated in the Chair of Biology, Rosario School of Medicines, UNR, shows overweight and type 2 diabetes. We compared pancreatic and renal pathology between β males of 200 and 400 days of age. Pancreas and both kidneys were weighed and fixed in 10% formaldehyde. Samples of pancreas included the whole organ from duodenum to the caudal end. Kidneys were cut axially through the renal pelvis. Specimens were embedded in paraffin, cut 2 m μ thick and stained with Hematoxylin-Eosin and PAS. Biomass was similar in both groups (A=454 \pm 15g; B=426 \pm 43g; $p=0.154$). Relative weight of pancreas was lower in A (A=0.0016 \pm 0.0002; \pm 0.0005; $p=0.041$). Insular structure was described; small and big islets were counted referred to a 100x microscopic field, computing at least 5 fields per organ. The number of small islets was markedly lower in B (A: mean=18; B: mean=1; $p=0.003$). In younger animals the mean of big islets was 3 and insular disruption was observed. At 400 days of age insular area was notoriously smaller (A=5.0 \pm 1.1, B=0.4 \pm 0.2; $p=0.000$). Relative weight of kidneys was lower in A (A=0.008 \pm 0.0003; B=0.010 \pm 0.001; $p=0.011$). Glomeruli, tubules, arterioles and interstice were analyzed. The percentage (%) of small glomeruli was significantly lower in younger animals (A=4.2 \pm 0.8, B=7.0 \pm 1.2; $p=0.005$). Mesangial expansion and floculocascular adhesions were not detected in A; in B these values were Mean=5% and 2%, respectively. In conclusion, young animals showed preservation of pancreatic insular area, with normal kidney histology; older rats decreased dramatically the insular area and presented evident glomerular lesions.

32. FERTILITY OF SPONTANEOUSLY DIABETIC RATS EVALUATED BY EXPLORATORY ANALYSIS OF BREEDING DATA BASE

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Diabetes may alter reproductive function and animal models have contributed significantly to the knowledge of various aspects of this syndrome. We intended to characterize the fertility of the eSS line of rats that develop type 2 diabetes without overweight, through productivity variables. Information obtained during 1984-2004 was used, producing a base in which we stored: number and date of birth of parents, date and weight of 437 females and 207 males when mating, offspring: yes/no, date of delivery, litter size at birth (n), survivors at weaning (s). We calculated: progenitors' age, time elapsed from mating to delivery (D), fertility coefficient indicating production of offspring per week ($FC=7n/D+21$) and survival coefficient ($SC=s/n$). Exploratory Data Analysis techniques were used. The frequency distribution of progenitors' age at mating was markedly asymmetrical to the right, while the mothers' weight was symmetrical. We compared the effectivity of the mating rats, their age and weight, whether the females had given birth (B) or not (noB) (mean \pm SD): Females: Age (d): B=107 \pm 28 vs noB=126 \pm 48, $p=0.000$; Weight(g): B=186 \pm 29 vs noB=193 \pm 36, $p=0.065$; Males: Age: B=133 \pm 58 vs noB=142 \pm 72, $p=0.162$; Weight: B=286 \pm 65 vs noB=291 \pm 82, $p=0.671$. Age and weight of B females were lower than noB. 77% of pregnancies were detected, and the following values were obtained: $n=8\pm 3$, $n_m=4\pm 2$, $n_f=4\pm 2$, $D=29\pm 6$, $FC=1.2\pm 0.5$ and $SC=0.9\pm 0.2$. The high productivity of eSS is achieved with mothers that had not reached the age in which diabetes is more intensely expressed.

33. EFFECT OF TESTOSTERONE ADMINISTRATION IN PRE-PUBERTAL RATS INFECTED WITH *Trypanosoma-cruzi*

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Adult male rats "1" (70 days old, A) are more resistant to infection with *T. cruzi* than prepubertal rats (21 days old, PP). A rats showed a mild acute disease whereas PP rats developed an acute infection with high parasitemia and myocarditis. Difference in susceptibility could be due to dissimilar testosterone plasmatic concentrations, almost undetectable in the PP. We evaluated whether testosterone administration on PP animals increased the resistance to the acute chagasic infection; studying parasitemia and myocardial lesions. One group of PP was inoculated with 1mg of testosterone propionate / kg animal (T) and another with sesame oil used as vehicle (V) at 14 and 21 days old. This last day, part of animals of each group was infected with 10⁶ trypomastigotes, subcutaneously. Animals who received testosterone increased parasitemia at day 14th pi [T+Tc, Median (M) = 8280 parasites/ml, Range (R) = 13915-1150, n=4; V+Tc, M = 977.5 parasites/ml, R = 3105-115, n= 6; p= 0.033]. The histopathological analysis of hearts at day 28th pi, revealed that lesion degree as well as its frequency were similar in infected groups, whether they were treated with testosterone or not. Contrary to expectation, testosterone administration in PP animals increased parasitemia, but not modified the acute cardiac lesion.

34. MATHEMATICAL MODEL FOR DEFINING EXPERIMENTAL GEL FILTRATION CONDITIONS

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Devising a laboratory technique often involves the use of contaminant or expensive compounds and needs time consuming tests. Choosing the gel, flow, volume of fractions, molecular weight markers and length of the column are some of the variables to be defined before the technique is performed. The objective of this work was to develop a mathematical model to obtain the optimal experimental conditions for a gel filtration chromatography. Data from gel filtration chromatographies on Sephadex G25, G50 y G100 were used for modelling: volume of fractions, elution volume of different proteins (V_e), void volume (V_o), total volume (V_T) and length of the column (H), mesh of gel particles (p), molecular weight of proteins (PM), flow (F), concentration of proteins in the elution buffer (C), amount of chromatographed proteins (P), molecular weight excluded (MW_{max} and MW_{min}). The model included three equations that establish the relationship among the mentioned variables. These equations were used in a computer program which allows obtaining the optimal conditions for a gel filtration chromatography in 1% of the time consumed in real laboratory conditions. The model also allows to determine the amount of proteins to be chromatographed, the most adequate gel and the fractions where the proteins will be obtained. Additionally, the software is useful for educational purposes when teaching gel filtration chromatography.

35. FRUITS AND VEGETABLES INTAKE AND RISK OF NON MELANOMA SKIN CANCER

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The world incidence of non melanoma skin cancer (NMSC)- basal cell carcinoma (BCC) and squamous cell carcinoma (SCC)- is increasing. This has been attributed to increased sunlight exposure, but much of the increase in incidence has occurred in those parts of the body that have always been exposed to sunlight. Investigations are developing to evaluate if dietary habits may modified the risk of NMSC. We carried out a case-control study to evaluate NMSC risk factors (sun exposure habits, skin sensitivity to sun exposure, sunburns history, skin cancer positive family history, naevi and actinic keratoses, instruction level, occupational history, and diet). Data were obtained applying a standardized questionnaire and a full-body skin examination. Cases (n=27) were both sexes individuals with clinical and histological diagnosis. Controls (n=37) were patients that attended the same institutions for other pathologies. 74,1% of cases and 37.8% of controls presented actinic keratoses (p=0,004); 33.3% of cases and no controls had more than 10 naevi (p<0,001); 29,7% of cases and 48% of controls had habitual sun exposure (p=0,004). After multiple logistic regression adjustment, the Odds Ratios (OR) for the highest and medium compared to the lowest tertile of fruits, cruciferous, vitamin A and carotenes rich vegetables, and other vegetables were not statistically significant. On the other hand, a decreased risk of NMSC (OR=0,13; p=0,03) was found for high intakes of green leafy vegetables (more than 40 g/day). These findings suggest that consumption of green leafy vegetables may help prevent development of these tumours.

36. BACTERIAL VAGINOSIS EPIDEMIOLOGY. ASSOCIATED RISK FACTORS

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Bacterial vaginosis (BV) is the most prevalent vaginal disorder in women. It has been considered that 90% of patients with inespecific vaginitis have Gardnerella vaginalis in their vaginal secretions, but 50% of them are asymptomatic. The objective of this study was to identify possible risk factors in BV development. A case-control study was done incorporating women 19-60 years old attending the Department of Gynecology, Centenary Hospital, Rosario City. Cases were patients with BV, with a thin homogeneous white and odorous discharge, a vaginal pH greater than 4.5, a positive amine test, and the presence of microscopically clue cells. Controls were patients with vaginal pH ≤ 4.5, Lactobacillus predominance, and with no other pathogenic microorganism. Structured interviews, Psychodiagnostic tests, and gynecological and microbiological exams, were done. Statistical analyses were based on multivariate techniques for case-control data. Adjusted odds ratios (OR) and their 95% confidence limits were obtained applying multiple logistic regression. A total of 142 patients were studied. Multivariate analysis shows that BV risk decreases 7.5% if sexual initiation age is incremented in one year, and increases 3 times if lifelong sexual partners number was greater than 2. No statistically significant differences were found for psychological variables. Conclusions: Early sexual initiation, and a high sexual partners number are factors that increased the risk of BV development.

37. ASSOCIATION BETWEEN THE MAJOR VIRULENCE FACTORS OF *Candida albicans* ISOLATES FROM VULVOVAGINITIS CASES

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Among the virulence factors of yeast of the genus *Candida*, secreted aspartic proteases (Saps) and phospholipases (PL) play a central role in disruption of the epithelium cell membranes. Yeast cell adherence to mucosal surfaces of the host is key for the development of candidiasis. We seek to study whether there is a link between the production of lytic enzymes and the adherence ability in 39 clinical isolates of *Candida albicans* obtained from patients with vaginitis. PL activity was detected by a solid media assay using malt extract agar supplemented with 2% egg yolk. Proteolytic activity was evidenced in a solid medium containing bovine serum albumin (BSA) as sole nitrogen source. The results for both, PL and Saps, were expressed as an activity index (Pz and Prz respectively). The adherence assay was performed at pH 7.2 by the technique described by Gibbons and van Houte. Results were expressed as the number of yeast cells adhered/100 mouth cells. The degree of association between adherence and enzyme activities was analyzed by the determination of the coefficient of correlation of ranges according to Spearman. We concluded that there is a strong inverse association between adherence and Prz values (coefficient = - 0.6157), of high significance ($p=0.0001$), while the coefficient value for adherence and Pz was of 0.1930 with no relevant statistic significance.

38. CRITERIA FOR THE SELECTION OF A NON LINEAR GROWTH CURVE

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In biological research it is useful describe the growth process of a population. Non linear mixed models are a powerful tool for analyzing the dynamic of the growth, but the selection of the appropriate model is not an easy task. In this paper we describe the nonlinear mixed model selection process to explain the weight evolution for two groups of mice and we compare two proposed methodologies. The model building strategy begins with the selection of parameters including random effects and the structure variance-covariance matrices. Then, it must select the factors that have an effect on the evolution of the response through time. In each step, different models are evaluated using traditional methods: the likelihood ratio and information criterion statistics, such as the Akaike information criterion (AIC) or Bayesian information criterion (BIC). These criteria of goodness of fit based on the likelihood function require the fit of several models, and the procedure could be slow due to convergency problems. In this paper in order to verify the goodness-of-fit based solely on the model at hand, two alternative measures are used. One of them is similar to the linear regression determination coefficient, R^2 , and values near 1 indicate a "good" model. The other measure considered, named concordance correlation coefficient, r_c , provides a concordance measure between fitted and observed responses; values near 1 indicate a perfect fit and values less or equal to 0 indicate a lack of fit. The iterative process provides a parsimonious model to describe the weight growth and compare the two groups. Although the results of the goodness of fit with the traditional method and the alternative method are similar, they do not support the use of the latter (models with values close to 0.90).

39. STUDY OF POLYMORPHISMS OF MTHFR (C⁶⁷⁷T) AND eNOS (G⁸⁹⁴T) IN A CHAGASIC POPULATION

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Polymorphisms of methylene tetrahydrofolate reductase (MTHFR) C677T and endothelial nitric oxide synthase (eNOS) G⁸⁹⁴T have been reported to be a strong risk factor for cardiovascular disease (CVD). The presence of these mutations may cause hiperhomocysteinemia and endothelial nitric oxide reduction. The aim of the present work was to carry out a descriptive study of allelic frequencies of MTHFR C⁶⁷⁷T and eNOS G⁸⁹⁴T in chagasic patients with chronic cardiopathy (C+C+, n: 9) and without chronic cardiopathy (C+C-, n: 8) comparing with healthy patients (C-C-, n:93). Peripheral blood samples were collected from subjects who agreed to participate and signed the consent forms. DNA was extracted from peripheral blood leukocytes by standard methods. The molecular characterization was analysed by PCR-RFLP. The distribution of the allelic frequencies for MTHFR (C⁶⁷⁷T) was: C+C+ (C: 0.848; T: 0.152); C+C- (C: 0.833; T: 0.167) and C-C- (C: 0.639; T: 0.361). For eNOS (G⁸⁹⁴T) was: C+C+ (G: 0.388; T: 0.611); C+C- (G: 0.312; T: 0.687) and C-C- (G: 0.742; T: 0.261). The results (95%) indicated marginally significant differences between the populations ($p < 0.01$). The metabolic impact of the variants MTHFR C⁶⁷⁷T and eNOS G⁸⁹⁴T behave as independent risk factors. The co-presence of these polymorphisms could promote the development of CVD.

40. DIAGNOSIS OF ORAL FUNGAL INFECTION IN PATIENTS UNDERGOING HEAD AND NECK CANCER RADIATION. ANTIFUNGAL SUSCEPTIBILITY OF ISOLATES

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Radiotherapy adverse effects are very common, they contribute to development of opportunistic infections. Genus *Candida* is often associated with oral diseases in susceptible patients. The aim of this study was to study the presence of yeast in oral lesions, in patients receiving radiotherapy for head and neck cancer, and to evaluate antifungal susceptibility of isolates. Swabs of oral mucosal lesions of 76 patients were studied. Antifungal susceptibility of the isolates was evaluated, with ATB Fungus-3 method, which tests 5-fluorocytosine (5-FC), amphotericin B (AMB), fluconazole (FCA), itraconazole (ITR) and voriconazole (VRC); and allows the estimation of the minimum inhibitory concentration (MIC). Yeasts were isolated in 74% of samples, being *Candida albicans*, most frequent specie (53%), followed by *C.tropicalis* (24%), *C.parapsilosis* (14%), *C.krusei* (5%), *C.dubliniensis* (2%) and *Saccharomyces cerevisiae* (2%). All strains were susceptible to VRC. For other antifungals, there were resistant or dose-dependent-susceptible strains. Only *C.krusei* was resistant to the FCA. About AMB, 2 isolates of *C. tropicalis* presented a value of 2 mg/l MIC, dose with high incidence of adverse effects. These studies are important to establish early and suitable therapy, wich contribute to achieve lowers rates of disseminated forms of candidiasis, and to reduce the difficulties in food intake that carries the presence of oral lesions.

41. SEMINAL QUALITY IN AGRICULTURAL WORKERS EXPOSED TO AGROCHEMICALS

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The agrochemicals are endocrinous disruptions that interfere with the functioning of the hormonal system. The contact with these substances affects the testicular function producing reproductive alterations. The spermatogenesis is a highly synchronized process. Alterations in this process produce immaturity in the ejaculation that is manifested with increased concentration of germinal cells in the semen and alterations in the sperm morphology. Our objective was to relate the occupational exposition to agrochemicals in men with idiopathic infertility with sperm parameters related with the spermatogenesis. We analysed 52 semen samples of men between 20 and 45 years old. Two groups were formed: G1 (n=21) workers exposed to agrochemicals and G2(n=31) men with no spermatogenic risk. The sperm study and functional tests according to WHO have been carried out to all samples. The concentration of sperm was determined by a subjective method with Neubauer camera, the Papanicolaou stain was used to evaluate the concentration of germinal cells and strict sperm morphology. The obtained results were: sperm concentration (SC) (sperm 10⁶/ml): G1: 21,1±7,1 vs G2:41,6 ± 9,2. Sperm morphology (M) (% normal sperms):G1:5,2±1,3 vsG2:8,2±3,6. Concentration of germinal cells (GC) (germinal cells 10⁶/ml) G1:0,91 ± 0,51 vs G2:0,32 ± 0,21. Values of reference: SC≥20x10⁶/ml; M≥15% and GC ≤0,5x10⁶/ml. The values of SC are inside of the rank of reference in both groups but is lower in G1, the M is altered in both groups, it is more marked in G1 and the GC is major in G1. These results show that the exposition to agrochemicals deteriorates the spermatogenic process. In the study of the infertile male it is important to evaluate the effects of occupational exposition to agrochemicals.

42. ANTIFUNGAL CAPACITY OF SULFADIMETOXINE-Ag(I) COMPLEXES

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During last decades there was a large increment of human fungal infections, which could be fatal in immunodeficient patients. Several antifungals showed toxicity and resistance, reducing the therapeutic options. In general, metal complexes of sulfa drugs enhance biological properties of the free ligand, like silver sulfadiazine. In this work we assayed silver-sulfadimetoxine complexes as antifungal ones. A white solid was obtained by mixture of aqueous solutions of AgNO₃ and sulfadimetoxine (SDM). The white solid was washed, in different synthetic procedures, with water or with ethanol, and crystallized from DMSO. The little differences observed among the complexes could be due to a H₂O. The minimum inhibitory concentration (MIC) and the minimum fungicide concentration (MFC) of both Ag-SDM complexes, SDM and AgNO₃ were determined, according to NCCLS specifications, for the following fungi: *C. albicans*, *C. tropicalis*, *S. cerevisiae*, *C. neoformans*, *A. fumigatus*, *A. flavus*, *A. niger*, *M. gypseum*, *T. rubrum*, *T. mentagrophytes*. All the fungi were susceptible to both Ag-SDM complexes. The major inhibition was observed with *C. neoformans* and *S. cerevisiae* (MIC = 15.6 and 125 µg/mL; and MFC = 62.5 and 125 µg/mL respectively). It should be noted that none of the assayed fungi was inhibited by the free ligand, so, the silver complexation seem to play an important role on the antifungal activity.

43. ROLE OF THE 1ST AND 2ND COORDINATION SPHERE OF MANGANESE IN THE SOD AND CAT ACTIVITY

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Catalases (CAT) and superoxide dismutases (SOD) deplete O₂⁻ and O₂⁼ in cells through a ping-pong mechanism involving cyclic oxidation and reduction of the metal cofactor. To disproportionate O₂⁻ and O₂⁼ efficiently, the reduction potential of MnSOD and MnCAT is fine-tuned to values much lower than that of the Mn³⁺/_(ac)Mn²⁺ couple. In order to understand how the redox potential of Mn is modulated by its environment, we have evaluated the redox potential and catalytic activity of two sets of water soluble mono- and dinuclear Mn complexes with the ligands: 1,3-bis(5-SO₃-salicylidenamino)propan-2-ol, 1,3-bis(5-SO₃-salicylidenamino)propane and 1,5-bis(5-SO₃-X-salicylidenamino)pentan-3-ol (X = H, Cl o Me). The aromatic ring substituents were used to mimic secondary electrostatic/inductive effects of the protein while the donor sites in the chosen ligands mimic the Mn 1st coordination sphere. The redox potentials were determined by cyclic, linear and square-wave voltametry. The catalase activity was evaluated by measuring the oxygen concentration of H₂O₂ + catalyst mixtures with a Clark-type oxygen electrode. The SOD activity was assayed by measuring the inhibition of the photoreduction of nitro blue tetrazolium in the presence of the catalyst. Our results show that the 1st coordination sphere controls the potential of the redox couple and modulate the catalytic function, and that the redox potential vary linearly with the Hammett constant of the substituent.

44. OXIDATION OF D-GLUCONIC ACID WITH VANADIUM(V). COMPARISON WITH RELATED SUBSTRATES

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Vanadium is a biological-relevant element. High concentrations of V(V) are found in ascidians, some mushrooms and worms. It is active in the oxidation of organic substrates such as carbohydrates and derivatives. The ability of these compounds to reduce the metal ion does not follow a general pattern, it depends on functional groups configuration, and conditions of reaction. Our studies about the reduction of V(V) by α-hydroxyacids show that the relative activity redox is based on the competition of relative oxidation rate vs the complexation processes substrate-V(V). We decided to evaluate the reduction of V(V) with substrates like D-gluconic and D-lactobionic acids and then compare the results with the studies realised with L(+)-tartaric acid. The monitoring of the redox reactions involved kinetic studies at pH=1-2. In conditions under study, VO₂⁺ is the predominant species of oxidizing agent. The reactions with D-gluconic and D-tartaric acid can be described via the formation of complexes substrate-VO₂⁺, which quickly lead to the reaction products. These complexes absorb strongly at 350 nm and may superimpose V(V) absorbance. For D-lactobionic acid, the formation and disappearance of complex are very fast, it is necessary the use of stopped-flow technique. The reactions occur through a free radicals mechanism, where V(V) is reduced by one electron. The relative rate of oxidation is: tartaric>D-gluconic>D-lactobionic acids. The characterization of intermediate and reaction products together with the kinetic studies will clarify the mechanisms of oxidation by V(V) and increase the knowledge of the bio-inorganic chemistry of this element.

45. REMOVAL OF CHROMIUM(III) USING RICE HUSK AS BIOADSORBENT

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Chromium is a highly toxic contaminant. Cr(VI) species interfere the development and growing of plants, while Cr(III) species are less toxic but can be oxidized to Cr(VI). The objective of this work was to optimize the capacity of rice husk to absorb Cr(III). The material was washed with distilled water and dried at 40 °C for 24 hours. It was grounded and sieved to retain the fraction of particles in the range of 0.3 – 0.5 mm size. A 2³ full factorial design was used to analyze the main factors that influence the adsorption process (pH, adsorbent mass, contact time) at initial chromium(III) concentration of 200 mg/L. Only pH and adsorbent mass were significant, with probability lower than 0.05 (confidence level > 95%). The adsorption process was optimized applying a central composite response surface design. The optimal conditions found for the adsorption of Cr(III) were pH = 3 and adsorbent mass = 5.65 g. In these conditions, 99% adsorption was achieved in 15 min. Adsorption isotherm was obtained at 20°C working at optimal conditions. Langmuir model was used to fit the experimental data and the value of q⁰ was 3,2 mg/g.

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46. QUALITY ASSESSMENT OF MAIZE MICRO-SILOS INOCULATED WITH POTENTIAL BIOCONTROL AGENTS

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An assessment regarding the evolution of chemical-fermentative parameters (CFPs) and microbiological parameters (MPs) in whole-plant maize experimental micro-silos (EMSs) (24 kg/EMS) was carried out. Two potential biocontrol agents (PBCAs) were used: *Streptomyces* C33-6 (St) and *Lactobacillus buchneri* (LAB/7) with proven *in vitro* anti-fungal activity. Eight different treatments were evaluated: control and every possible combination of: St, LAB/7 and *Aspergillus parasiticus*, an aflatoxin producer, in good and bad conditions (GC – BC) of storage. After 45 days of “field” evolution, EMS samples were taken and CFPs were determined: pH levels, ammoniac nitrogen/total nitrogen (%NH₃/TN), acid detergent insoluble nitrogen/TN (%ADIN/TN), dry matter (%DM), crude protein (%CP), acid detergent fiber (%ADF) and neutral detergent fiber (%NDF); as well as MPs: total fungi count (TFC) of *Aspergillus* –from the flavus group count (AFC), *Streptomyces* and *lactobacilli* (MRS agar) counts; mycotoxin concentration: total aflatoxins (AF) and deoxynivalenol (DON), by ELISA. The statistical analysis was carried out by means of ANOVA, Turkey Test or Mann-Whitney test and Dunn's Comparison Test. BC increased pH levels, % NH₃/TN, %CP, %ADF and %NDF, %ADIN/TN, TFC, DON and decreased %DM in all treatments (p>0.05). In BC LAB/7, NH₃/TN, TFC, AFC, and DON decreased (p>0.05). St slightly reduced TFC and DON. LAB/7 inhibited St growth in EMSs (this effect was not observed *in vitro*). Thus, both PBCAs could not be inoculated simultaneously.

47. FUCOSYLTRANSFERASE 2 POLYMORPHISM IN SALIVA SAMPLES

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About 20%-25% of Caucasian individuals are nonsecretors who fail to express soluble A, B, H, and Lewis b histo-blood group antigens in secretor organs and secretor fluids because the absence of the Secretor gene *FUT2* that encoded α(1,2)fucosyltransferase activity. In the present study, we investigated the *FUT2* polymorphism from saliva samples by a PCR reaction. We determined the secretor status in saliva (n=12) with the hemagglutination inhibition technique using monoclonal antibodies anti-A, anti-B and lectin *ulex europeaus*. Agglutination of cells by antibody in tubes containing saliva samples indicates non secretor status and failure of known antibody to agglutinate indicator cells secretor status. For the molecular studies the samples were centrifuged and the genomic DNA was extracted from the pellet by an enzymatic digestion method. The DNA samples were analyzed by ASA-PCR with specific primers for the G428A allele and for the wild type allele of the *FUT2* gene. The PCR products (132 bp) were analyzed in 2% agarose gel containing ethidium bromide. The results obtained by serological and molecular methods presented 100% of concordance. Positive samples for secretor status have the wild type allele *Fut2*. While negative samples for secretor status does not. This preliminary study demonstrates that allelic varieties of the *FUT2* gene can be investigated using saliva samples which were obtained with non-invasive methods.

48. REACTIVITY OF THE RH SYSTEM ANTIGENS IN SENESCENT RED BLOOD CELLS

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During aging of red blood cells (RBC) there is an exposition of cryptic antigenic sites, mainly in the 3 band protein, which presents a strong interaction with the Rh complex and participates in the formation of the Senescent Cell Antigen (SCA). In early studies we demonstrated an increase in the expression of the D antigen during aging of RBC. The aim of this work was to study the reactivity of C, c, E and e Rh system antigens on RBC of different ages. We determined the Rh phenotype in blood samples (n=19) using specific antibodies. The blood was centrifuged on preformed gradients of Percoll (GP) and was separated in young (Y) and senescent (Se) RBC fractions. We studied the capacity of reaction of the suspensions with geometric dilutions of the corresponding antiserums (anti-C, anti-c, anti-E and anti-e). The titles were expressed as mean ± IR and analysed by the Wilcoxon test. The values were: anti-C (YRBC: 16 ± 24 vs SeRBC: 16 ± 16; p= 0,689; n=15); anti-c (YRBC: 16 ± 12 vs SeRBC: 32 ± 16; p = 0.053; n=8); anti-E (YRBC: 16 ± 56 vs SeRBC: 32 ± 112; p =0.091; n=3); anti-e (YRBC: 8 ± 12 vs SeRBC: 8 ± 12; p=1.0; n=19). The results did not show significantly differences in the expression of the antigens of the Rh protein RHCE on the RBC populations of different ages. The implementation of methods of higher sensitivity would allow a better analysis of the modifications on the epitopes of the Rh system that occur during RBC aging.

49. MARKERS TO SEPARATE SENESCENT RED BLOOD CELLS: MEAN CORPUSCULAR VOLUME AND CREATINE

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The Red Blood Cell (RBC) ageing is a continuous process which does not produce any critical change that allows the precise recognition of the senescent RBC (SeRBC). During this process both the mean corpuscular volume (MCV) and the content of erythrocyte creatine diminish and both can be used as an ageing marker. The aim of this work was to investigate these parameters in SeRBC and in young RBC (YRBC) populations. Blood was obtained from normal volunteer donors (n=13). EDTA anticoagulated blood samples were centrifuged on preformed Percoll density gradients. The RBC were separated into the 5-10% lightest (YRBC) and densest (SeRBC) populations with a peristaltic pump. After washing three times with physiologic solution, the different fractions were diluted to achieve a 40% hematocrit. A SYSMEX SF3000 counter was used to obtain the MCV. The creatine concentration was spectrophotometrically obtained from the reaction with diacetyl and alpha-naphthol. The Student's t for dependent samples was used in the statistical analysis. The average MCV for the SeRBC (89.2 ± 2.9 fL) was significantly lower (p<0.0001) than for the YRBC (91.4 ± 3.3 fL). The creatine concentrations values in SeRBC (2.76 ± 0.76 µg/mg Hb) were statistically lower (p<0.0001) than in YRBC (4.15 ± 1.12 µg/mg Hb). These similar findings indicate that both the MCV and the creatine concentration are equally efficient to evaluate the separation of RBC populations of different ages.

50. AN ALGORITHM DEVELOPED IN PDL FOR OBTAIN RELEVANT PARAMETERS IN CELL BIOLOGY BY FCS

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The molecular diffusion in biological membranes is a determining factor in cellular function. Fluorescence Correlation Spectroscopy (FCS) technique has become the most important technique in microscopy field because his versatility to analyze the molecular dynamics in both biological and artificial membranes. It is based on the quantification of fluorescence intensity fluctuations emitted by a few small numbers of particles in a small volume (1 fL) at nanoseconds time scales. This signal is processing with the autocorrelation function and analytical expressions are fitting and it is allow interest kinetic parameters obtained, such as time and the diffusion coefficient. In this study we have developed a genetic algorithm in PDL (Perl Data Language) that allows fitting relevant parameters in cell biology using the FCS signal. The calibration and technique tuning conducted experiments in FCS with Rhodamine B dilute solutions (3 nM to 900 nM) in ultrapure water using two different lighting conditions at 543nm wavelength determined by the HeNe laser power (12% and 51%). We determined the effective volumes size ($V_{eff12\%} = (0.49 \pm 0.01) \text{ fL}$ and $V_{eff51\%} = (0.62 \pm 0.01) \text{ fl}$) and the diffusion coefficient for the Rhodamina B in aqueous solution, whose value is keeping with the literature ($3 \times 10^6 \text{ cm}^2/\text{s}$). One can conclude that the accuracy on certain parameters is satisfactory, being an advantage for studies in the FCS can have a program developed in open source freely accessible to the scientific community.

51. DEVELOPMENT OF AN ENZYME IMMUNOASSAY FOR ANTI-ANNEXIN V ANTIBODIES DETERMINATION

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It is assumed that the presence of specific anti-annexin V antibodies (Ab) would be associated to an increased risk of fetal losses. The aim of the this study was the development of a sandwich ELISA for the determination of plasma levels of anti-annexin V Ab and its validation against a commercial kit (Orgentec Diagnostika GmbH). Samples of 38 fertile-age, non-pregnant women, age (± DE): 33 ± 8 years; range: 20-48 were analyzed. We designed a method in which polystyrene strips were coated with human annexin V (Sigma) and they were incubated overnight at 4°C. After washing and blocking, plasma samples diluted 1/100, calibrators and positive and negative controls were added. Fixed anti-annexin V Ab were revealed with peroxidase-labeled anti-human IgG Ab and tetramethylbenzidine-H2O2. Optical densities (O.D.) were determined at 450 nm with a reference filter at 630 nm. Concentration of Ab in each sample was determined based on the calibration curve obtained by plotting O.D. vs. concentration (U/ml). Precision (inter-assay VC) of the technique was of 4.5 % and exactitude (intra-assay VC) was of 8%, acceptable values for such a biological assay. Detection limit (blank O.D. + 3 SD) was of 0.055 absorbance units, indicating that our assay is capable of detecting minimum quantities of anti-annexin V Ab. A positive and statistically different from zero association was found between both techniques (r=0.6; p<0.05). We can count with an "in house" ELISA that allows us to evaluate with high reproducibility and trustability the *in vitro* detection of anti-annexin V Ab.

52. ALTERED EXPRESSION OF AQP2 IN RATS WITH BILATERAL URETERAL OBSTRUCTION

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It has been demonstrated that bilateral ureteral obstruction (B) cause impairment of water and electrolytes renal excretion. The aim of this work was to study the effect of B on aquaporin 2 (AQP2) protein abundance in apical membranes from rat kidneys. Ureters were obstructed for 24 h in all experiments, and released for 1 (B1), 2 (B2) and 7 (B7) days. A parallel group of Sham rats (S) was employed. Fractional excretion of H₂O (EF%H₂O) and urinary volume (Uv) were determined employing conventional clearance techniques. AQP2 (%) expression was determined by immunoblotting in renal cortex and medulla. Data were analysed with ANOVA plus Newman-Keuls P<0.05: [a]vsS, [b]vsB1, [c]vsB2, [d]vsB7. Sample size (n).

	Uvensi	EF%H ₂ O	AQP2 cortex	AQP2 medulla
S	5.01±0.74 (16)	0.87±0.12 (16)	100±5 (4)	100±2 (4)
B1	11.60±1.12 ^{a,c,d} (5)	9.86±1.57 ^{a,c,d} (5)	71±7 ^{a,c,d} (4)	72±6 ^{a,c,d} (4)
B2	7.95±1.17 (6)	5.04±0.93 ^{a,b,d} (6)	129±8 ^{a,b} (4)	117±20 ^b (4)
B7	5.23±0.52 (5)	0.89±0.10 ^{b,c} (5)	149±7 ^{a,b} (4)	147±19 ^{a,b} (4)

In conclusion, B1 was associated with a marked reduction in expression of AQP2 coincident with the development of polyuria. In B2 and B7 groups, the expression of AQP2 in apical membranes was normalized to control levels contributing to the improvement of water excretion.

53. DETERMINATION OF ZN IN SEMINAL SPOTS, APPLICATION MEDICOLEGAL

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The study criminalistic chemical requires by its characteristic test of certainly that they allow to exclude or not it seminal identity form an expert work amount with the smaller amount of possible sample. The Zn is a marker or prostate gland that is in high concentration in seminal fluid. Our objective was to evaluated the levels of Zn en seminal spot and their application in legal medicine. We prepared 33 seminal stain, adding 0,2 ml of seminal plasma on a linen cloth, after the drying to room temperature, we cut areas of 0,79 cm² of linen cloth with spot and (Am:33) and of linen cloth without spot (As:33). Mineralization of organic matter was realised leading then to a final volumen of 10 ml and Zn by absorption spectroscopy was determined. We estimate the Zn concentration per unit area (µg/cm²) for both groups of sample obtaining: Xm:23,47± 9,09; Xs:3,00±0,10. In statistical study was conducted rising the student t test found a statistically significant difference between both groups of sample p:0,0006. These results allow us to conclude that the determination of Zn can be applied in the investigation of seminal stains. The evaluation of Zn is very useful in the cases of sexual abuses realised by azospérmic subjects and its estimate must be considered like a test of exclusion of seminal fluid, that must be used like confirmation of other test.

54. OPTICAL METHODS FOR CLINICAL APPLICATIONS IN VASCULAR PATHOLOGIES

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We present an interdisciplinary study of the erythrocyte (RBC) adhesion alterations concerned in vascular pathologies. The measurement of RBC aggregation is important for quantifying flow abnormalities in several vascular pathologies as hypertension and diabetes. Evaluation of RBC aggregation as been performed by several different experimental techniques such as: a) Laser back-scattering technique, whose signal is proportional to the amount of aggregated cell. b) Partition Assay (P) is determined employing an aqueous biphasic system. Negative charged RBC move to the positively charged polyethylene glycol rich top phase and P is defined as percentage of hemoglobin content in the top phase to total hemoglobin. c) Aggregated morphology is characterized by a dimensionless parameter called Aggregate Shape Parameter (ASP) defined by $ASP = 4\pi A/2P$, where A is the projected area of the aggregate and P is their perimeter. d) Binding of the cationic dye Alcian Blue. This is a complex amphoteric molecule that binds to acidic glycoproteins, which represent a large class of cell surface anionic molecules. Alcian Blue binding is an expression of the anionic charge on the cell surface. The results are presented and analyzed in function of clinical sheet and usual biochemical parameters. Different levels of alterations are detected in all parameters analyzed depending of the clinical situation of each patient. Such alterations may influence the erythrocyte mechanical behavior in microcirculation.

55. STUDY OF THE RH LOCUS IN RHD-NEGATIVE AND WEAK D INDIVIDUALS

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The RH locus has two structural genes in tandem named RHD and RHCE that codify the RhD and RhCE polypeptides, respectively. In Caucasians, the RhD negative phenotype is caused by a complete deletion of the RHD gene. However it has been reported the presence of fragments of this gene in some of these individuals. The aim of this work was to investigate the genetic organization of the RH locus in RhD negatives individuals in our population. We studied 278 blood samples (RhD negatives: 270; weak D: 8). We determined the Rh phenotype by hemmagglutination using specific monoclonal antibodies and investigated the presence of the RHD gen using a multiplex PCR strategy. The phenotypes obtained were: dcece: 249, dCcee: 15, dccEe: 3, dCCee: 3; D^uCcee: 4, D^uccce: 3, D^uccEe: 1. By molecular biology analysis we determined the 2 specific regions of the RHD gene in 3 phenotypes dcece and in all D^u. In 1 dcece we only detected the presence of the 3' non coding region. Further studies in 4 samples dcece showed that 2 alleles were the pseudogen RHD^ψ, 1 can be attributed to a hybrid RHD/RHCE and the other one did not present any alterations in the polymorphisms studied. We did not find modifications in the RHD alleles of the D^u. The results indicate that deletion is not the only causative process of the RhD negative phenotype in the studied population (1.48% of RHD null alleles). The molecular identification of all D^u phenotypes would be useful in the Blood Bank when classical techniques do not allow conclusive results.

56. ASSOCIATION BETWEEN HEPATITIS AUTOINMUNE AND THE SYSTEM HLA

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Autoimmune Hepatitis (AIH) is a progressive disease of the liver, characterized by the presence of necrosis. The susceptibility of AIH is determined in part by genes linked to the region HLA. The aim of this work was to study the contribution of the HLA-DRB1 alleles in development of AIH in Rosario. The study included 20 unrelated individuals with diagnostic of AIH. A control group (Co) (n= 81) of non-related healthy individuals was included. The alleles were tested for HLA class II genotyping using PCR-SSP technique. Differences in the distribution of HLA-DRB1 alleles between patients and controls were analyzed by Pearson's χ^2 -test with Yates correction or Fisher's exact test if applicable. Relative risks (RR) were calculated. The alleles HLA-DRB1 more frequent among patients were: DRB1*0101 (25%); DRB1*0401 (22.5%); DRB1*0301 (17.5%); DRB1*0701 (12.5%) and DRB1*1301 (7.5%). The higher prevalence of genetic markers in Co alleles was as follows: DRB1*0701 (14.2%); DRB1*1103 (13%); DRB1*0808 (12.4%); DRB1*1303 (9.3%); DRB1*1101 (8.0%). In comparison with the control group, AIH patients revealed a greater occurrence of the alleles: DRB1*0101 RR=4.16; DRB1*0301 RR=28.18 y DRB1*0401 RR=5.20. Molecular typing allowed the identification of increased frequencies of DRB1*0101, DRB1*0401 and DRB1*0301 in patients, suggesting that these antigens could be related with the development of AIH. Protective alleles for this disease were not found.

57.

FILAMENTIZATION IN NATURAL AND SYNTHETIC MEDIUM OF *Candida* SPECIESTosello ME¹, Biasoli MS¹, Luque AG¹, Amigot SL¹, Racca L², Magaró HM¹.¹CEREMIC. ²Estadística. Fac.Cs.Bioq.y Farm. UNR. E-mail: me_toselloar@yahoo.com.ar

The objective of this work is to compare the filamentization capacity of different *C. albicans* (Ca) and *C. dubliniensis* (Cd) isolates in natural and synthetic medium. Two reference strains and five Ca and six Cd isolates of different clinical specimens were used. Fifty microliters of a suspension ($2.5 \cdot 10^7$ lev/ml) were inoculated in: a) 100µl of pool of serum (PS), b) 100µl of bovine fetal serum (BFS) and c) 0.5 ml of 199 Medium (M199) (Sigma), incubating at 37°C. Sixty and ninety minutes later the number of yeasts that emitted germinative tube (TG) were registered. The N° of yeasts with TG (LTG) was greater in natural medium (PS and BFS) than in the synthetic M199, for all the strains at both times ($p < 0,0001$). The N° of LTG was greater at 90' than the N° of LTG at 60', in all media and for all yeasts ($p < 0,0001$). It was observed that Ca strains presented, in average, major filamentization degree than Cd. In the culture conditions, Ca33 and Ca485 presented a greater LTG than all the *C. dubliniensis* strains ($p < 0,05$). *C. dubliniensis* have the capacity to produce TG *in vitro*, but the filamentization degree is minor to that observed for *C. albicans* strains. These results would confirm the smaller virulence of *C. dubliniensis* with respect to *C. albicans* and are in agreement with the smaller degree of infection in patients and animal models

58.

MORPHOLOGICAL CHARACTERS AND DRY MATTER PRODUCTION OF ALFALFA (*Medicago sativa* L.) WITH DIFFERENT WINTER REST IN TWO MATURITY STAGESCechetti S, Spiller L¹, Verdura L, Acebal MA, Calvo F, Neffen G, Ceconi P, Figallo R².Nutrición Animal y ¹Forrajes, Cs.Agrarias; ²Química Biológica, Cs.Veterinarias (UNR); ³INTA EEA G.Vllgas.

Animal production systems response depends on the amount and quality of provided forage. In the south of Sta Fe (Argentina), the most utilized alfalfa cultivars belong to degree of winter rest (WR) intermediate (IR) and short (SR). The objective of this work was to study height (H), leaf/stem ratio (L/S) and forage production (DM/ha) of alfalfa cultivars in two maturity stages (MS) Early Bloom (EB) and Full Bloom (FB), during 2007 spring-summer growing cycle. The experiment was carried out in the UNR's Faculty of Agric.Sci. (33°S). Alfalfa cultivars were GAPP 969; Cikum; Bárbara; Araucana and Reina (SR); Victoria; Mayacó; Patricia and 5681 (IR). Experimental design was a RCB with three replications. Samples were obtained with mechanical scissors using 0,6 m² marks to quantify forage production; H and L/S ratio were determined on subsamples of 30 stems, oven-dried at 60°C. Results obtained were analyzed by two way ANOVA (WR and MS), means were compared by LSD test ($p = 0,05$). Significant interaction between WR and MS was not detected. No differences were found for the WR, but H and DM/ha were greater in FB than EB. Results suggest that maturity stage is the most important factor in the characteristics studied and is not associated with the level of winter rest. The lineal regression of H over DM/ha were significant, $R^2 = 0,33$ (EB) and 0,40 (FB); so, H would be a simple tool for predicting alfalfa forage production in field conditions.

59.

MATURITY GROUP AND METEOROLOGICAL VARIABLES EFFECTS ON SOYBEAN YIELD IN ZAVALLA, ARGENTINA

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Field trials were carried out in Zavalla, Argentina (33° 01' S) in 2006/07 and 07/08 cropping seasons (CS) on a Typic Argiudoll soil. Twelve cultivars of Maturity Group (MG) III to VII were used. Sowing dates (SD) were 11 December 2006; 28 December 2006; 5 November 2007 and 6 December 2007. Phenology, daily mean temperature, rainfall, and incident solar radiation (MJ.m⁻²) were recorded throughout the CS. Experimental design was a randomized complete block with 3 replications for each CS and SD. Seed yield, adjusted to 13.5% humidity, plant height, main stem node number, aboveground dry matter and harvest index were determined. Data were analyzed by analysis of variance and regression and LSD test was used to compare means. In order to characterize the environmental conditions under which the cultivars grew, a Principal Components Analysis was performed. Analysis of variance indicated that MG, CS, SD and MG x CS interaction explained the 43.0%, 24%, 8 and 2%, respectively, of the total variability. Thus, genotype attributes and environmental conditions had the greater effects on seed yields in both CS. MG IV and VII had the highest and lowest seed yields, respectively. In both CS, daily solar radiation between initial flowering and initial seed filling stages was the meteorological variable that had the highest and positive association with seed yields. This is the most critical period for seed setting. In order to achieve high seed yields, our results highlight the importance of cultivar selection for an efficient use of the environmental resources and the adoption of crop management practices that avoid long periods of water and solar radiation stresses.

60.

PHYSIOLOGICAL QUALITY OF SUNFLOWER ACHENES FROM PLANT SUBMITTED TO DIFFERENT LEVELS OF DEFOLIATIONCaruso C¹, Cecarelli N¹, Seguetti J², Tuttolomondo G¹, Rosbaco I¹, Bisaro V³, Salinas A².¹Extensive Crops, ²Vegetal Physiology, ³Statistics. Agricultural Sciences Faculty. UNR – CIUNR. (S2125ZAA). Zavalla, Santa Fe. Argentina. E-mail: gtuttolomondo@hotmail.com

The aim of the work was to determine the physiological quality of sunflower achenes obtained from plants submitted to different levels of defoliation. The experiment was made in the Experimental Field of the Agricultural Sciences Faculty - UNR, and was sown at 12/11/07. There were used the following cultivars: CF17 DMR (traditional) and Olisum 2 (high oleic acid). The experimental statistical design used was randomized blocks with three repetitions and plots with 4 furrows of 3 m long spaced out 0.70 m, with a sowing density of 4 plants by linear meter. The treatments were applied on the two central furrows and each one was divided into three parts with the following levels of defoliation (D): 0% (control), 45% and 90% of D. There were determined: Weight of 1000 achenes (g; P); Viability by tetrazolium (%; T); Germination (%; G); First Counting (%; V). Data were submitted to factorial analysis. P showed significant differences with 90% D in both hybrids. CF17 DMR showed lesser T than Olisum 2. Plants of Olisum 2 that were submitted to 90% D showed greater T than the control. G showed significant reduction with 45% D in both cv. CF17 DMR showed greater V than Olisum 2. Physiological quality was more affected by 45% D than by 90%. The cultivars showed different response to D and Olisum 2 was more stable to D.

61. THE FAMILY ARISTOLOCHIACEAE IN THE PROVINCE OF SANTA FE (ARGENTINA)

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The *Aristolochiaceae* encompass seven genera distributed in tropical and temperate regions of the world. In Argentina two genera and 26 species are found. The family comprises perennial herbs or twining shrubs. Leaves simple, alternate, petiolate, entire or lobed. Hermaphrodite zygomorphic flowers, usually foul smelling, solitary or in terminal or lateral racemes/cymes, with a petaloid perigonium. The genus *Aristolochia* Tourn. ex L. presents a tubular perigonium, ventricose in the base ('utricle') and 1-3 lobate in the apex. Androecium with 3-5-40 stamens in 1-2 cycles, free or united to the style making up the gynostemium. Gynoecium with 3-6 carpels, inferior ovary with numerous ovules. Fruit a septicidal many-seeded capsule. The object of the present contribution is to set off the taxonomical study of the family for Santa Fe, through observation in the field, analysis of plant collections (Herbaria SF, SI and UNR) and revision of the literature. The family is represented by the genus *Aristolochia* Tourn. ex L. with seven species: *A. angustifolia* Cham., *A. brevifolia* (Cham.) Hauman, *A. ceresensis* Kuntze, *A. elegans* Mast., *A. fimbriata* Cham., *A. macroura* Ortega y *A. stuckertii* Speg. *Phoradendron* Nutt. with only three species: *Phoradendron acinacifolium* Mart. ex Eichler, *P. hieronymi* Trel. and *P. liga* (Gillies ex Hook. & Arn.) Eichler. A species distribution map, a brief description of each species, botanical illustrations and a key for field recognition are provided.

62. SOIL MICROBIAL PHYSIOLOGICAL PROFILING AS INFLUENCED BY TOPOGRAPHY

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Topography can affect soil microbial processes, since it influences organic matter distribution, water content, erosion and deposition of soil materials from higher landscape areas. In the present work, changes produced by different landscape positions in soil microbial community were evaluated by BD Oxygen Biosensor System (BD-Oxy). Samples were collected (0-10 cm) from high or summit (S), midslope (M) and footslope (F), in soybean crop. The response was evaluated by the addition of mannose, coumaric acid and asparagine in the BD-Oxy plates and a control without substrate. The maximum peaks of normalized fluorescence (NRFU) were recorded. Highest values of NRFU were found in coumaric acid and asparagine both in S and F. In M, higher NRFU was observed with respect to S and F, in the substrates and in the control. This response is consistent with the high carbon background in that landscape position due to the deposition of material from higher positions. A topographical gradient was observed for microbial activity possibly related to edaphic material loss area in S, an accumulation area in the M and poor physical conditions in F.

63. ROOT GROWTH OF SUNFLOWER PLANTLETS TREATED WITH IMAZAPYR HERBICIDE

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Imidazolinone resistance (IMI-R) was incorporated in sunflower using conventional breeding methods and represents a great advantage for controlling weeds. The objective of this work was to evaluate the root growth of sunflower plantlets. Three inbred lines differing for their IMI-R: susceptible (S), intermediate (I) and resistant (R) and the crosses between them were evaluated. Achenes were seeded in speedlings filled with perlite and watered by capillarity with a 25% strength MS saline solution (Murashige and Skoog, 1962) with different doses of imazapyr: 0 (control)-1,25-2,5-5-7,5-10 µM. For each treatment 3 replications of 10 seeds each were incubated under controlled conditions for 8 days. The variables primary root length, longest lateral root length and length of primary root (that presented) lateral roots greater than 5 mm were analysed through ANOVA. S plantlets grown in presence of herbicide showed short tip-necrosed roots (<1cm) and no lateral roots. For all genotypes except R line, mean values significantly (p<0,05) diminished as imazapyr doses increased for variables of primary root growth. In the presence of imazapyr 10 µM all genotypes diminished significantly for the variable of lateral root growth. It was concluded that different resistance degrees can be discriminated through this method. This test could be useful to assist conventional breeding programs for the development of imidazolinone resistant hybrids.

64. THE FAMILY JUNCACEAE IN THE PROVINCE OF SANTA FE (ARGENTINA)

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The object of the present contribution is the taxonomical study of the Family *Juncaceae* for Santa Fe (Order *Liliales*), which includes eight genera and about 300 species in temperate and cold regions of the world. In Argentina is represented by seven genera and some 60 species. They are perennial hydrophytic plants, with a scapose stem or more rarely leafy in the upper part. Flowers actinomorphic, hermaphrodite or diclinous-dioecious, solitary or more commonly displayed in anthelas; occasionally panicle, corimb or capitulum. Ovary superior, 3-carpellate, unilocular. Fruit capsule with numerous fleshy seeds. The methodology consisted in observation in the field, analysis of plant collections (Herbaria SF, SI and UNR) and existing literature. Our preliminary results show that the family is represented in Santa Fe by one genus: *Juncus* L., and 14 entities: *Juncus acutus* L. subsp. *leopoldii* (Parl.) Snogerup; *J. arcticus* Willd. var. *andicola* (Hook.) Balslev; *J. arcticus* Willd. var. *mexicanus* (Willd.) Balslev; *J. bufonius* L. var. *bufonius*; *J. capillaceus* Lam.; *J. densiflorus* Kunth; *J. dichotomus* Elliott; *J. imbricatus* Laharpe; *J. microcephalus* Kunth; *J. pallascens* Lam. var. *achalensis* (Barros) Novara; *J. pallascens* Lam. var. *pallascens*; *J. tenuis* Lam. var. *congestus* Engelm. ex Buchenau; *J. uruguensis* Griseb. and *J. venturianus* Castillón. A distribution map, dichotomic keys for genera and species and some photographs are presented.

65.

THE FAMILY VISCACEAE IN THE PROVINCE OF SANTA FE (ARGENTINA)

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The *Viscaceae*, in the Order *Santalales*, encompass one genus and 13 species in Argentina, of which only three species are present in Santa Fe. It comprises herbaceous or sub-shrubby hemi parasite plants which generally grow on Dycots. They have opposite-decussate leaves, with a toothed basal cataphyllous sheath. Small inconspicuous unisexual flowers, greenish-yellow, orange or reddish, in articulate axillary spikes; three-piece fleshy perigonium. Male flowers reduced to 3 sessile anthers, female flowers with unilocular minute-styled ovary where only the stigmatic region can be distinguished. Fruit a globose pseudo berry with accrescent tepals. The object of the present contribution is to set off the taxonomical study of the family for Santa Fe, through observation in the field, analysis of plant collections (Herbaria SF, SI and UNR) and revision of the literature. The family is represented by the genus *Phoradendron* Nutt. with only three species: *Phoradendron acinacifolium* Mart. ex Eichler, *P. hieronymi* Trel. y *P. liga* (Gillies ex Hook. & Arn.) Eichler. The latter is the more frequent, commonly found in the 'Cuña Boscosa', on trees of the *Fabaceae*, such as *Geoffroea decorticans* (Gillies ex Hook. & Arn.) Burkart ('chañar') and *Prosopis nigra* (Griseb.) Hieron. ('algarrobo negro'). A species distribution map, a brief description of each species, botanical illustrations and a key for field recognition are provided.

66.

VASCULAR FLORA OF THE SANTA FE PROVINCE: BROMELIACEAE

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The Family *Bromeliaceae*, Order *Bromeliales*, comprises 46 genera and 1100 species of tropical and subtropical regions of America. The present contribution provides keys for the identification of taxa based on morphological characters and a map of geographical distribution. The method consists of bibliographical review, consultation of national herbaria with important collections of the province (SF; SI; UNR), field work experience of the authors and lab work to confirm the specimens identity. Six genera are found in Santa Fe: *Aechmea* Ruiz & Pav., *Bromelia* Plum. ex L., *Dyckia* Schult. f., *Pseudananas* Hassl. ex Harms, *Tillandsia* L. and *Vriesea* Lindl. *Aechmea*, *Bromelia* and *Dyckia* are represented by two taxa each: *A. distichantha* Lem. var. *schlumbergeri* E. Morren ex Mez and *A. distichantha* Lem. var. *distichantha*; *B. serra* Griseb. and *B. urbaniana* (Mez) L.B. Sm.; *D. ferox* Mez and *D. ragonesei* A. Cast. Only one species of *Pseudananas* is found, *P. sagenarius* (Arruda) Camargo, and ten species of *Tillandsia*: *T. aëranthos* (Loisel.) L.B. Sm., *T. bandensis* Baker, *T. bryoides* Griseb. ex Baker emend. L.B. Sm., *T. duratii* Vis. var. *duratii*, *T. duratii* Vis. var. *saxatilis* (Hassl.) L.B. Sm., *T. ixioides* Griseb., *T. loliacea* Mart. ex Schult. f., *T. meridionalis* Baker, *T. recurvata* (L.) L., *T. stricta* Sol. ex Ker Gawl., *T. tricholepis* Baker. The taxa *Tillandsia usneoides* (L.) L. and *T. capillaris* Ruiz & Pav. f. *hieronymi* (Mez) L.B. Sm. are mentioned for Santa Fe for first time, and also *V. friburgensis* Mez var. *tucumanensis* (Mez) L.B. Sm.

67.

DETECTION OF FRUIT POLYPEPTIDES IN TOMATO GERMPLASM

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Total polypeptide profiles may be quantified as the percentage of proteins per band (%B), transforming dichotomic variables presence/absence of a given polypeptide into a continuous one. The aim of this experiment was to characterize 18 cultivated and wild tomato genotypes (*Solanum* section *Lycopersicon*) by means of the %B (extracted from pericarp tissue) using Principal Component Analysis (PCA). The genotypes were three wild accessions (LA722, LA2181 and LA1246) of *S. pimpinellifolium* and three (LA1385, LA1320 and LA1673) of *S. lycopersicum* var. *cerasiforme*, three cultivars (CAI, Uco and 804627) and nine recombinant inbred lines obtained from an interspecific cross between CAI and LA722. Three fruits by genotype were harvested at two ripening stage: mature green and red ripe (total number of fruit 108). The SDS-PAGE was carried out according to standard protocols. Seventy four bands were detected (37 at each stage) and %B was calculated over these bands. The PCA had a cophenetic correlation of 0.71 showing that the first eight principal components explained 70% of the total variability among genotypes. The first two principal components explained 25% of total variability, and 24 bands had correlation coefficients higher than 0.50 or lower than -0.50 with them. These %B in the two ripening stages and the use of the PCA analysis allowed to characterize these eighteen genotypes.

68.

DEVELOPMENT OF RUTAX X-RAY EQUIPMENT FOR USES IN SEED LABORATORY FOR ROUTINE ANALYSIS

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The well-known X-ray technique is commonly used in medicine, biology and various industries. The International Rules for Seed Testing issued by the International Seed Testing Association include a chapter devoted to the use of this technique. Likewise, the Association of Official Seed Analysts issued an X-ray handbook on the use of this technique for agricultural and forest tree species. The aim of this work was to develop a specific X-Ray equipment to use in research and routine analysis in seed laboratories. The equipment uses radiographic plates of 18 x 22 cm and traditional developing. They can be scanned with specific scanners and filed digitally. Rutax equipment permits to work with a range of 0 to 50 kV of tension and 0 to 300 mA of electric current. That characteristic permits its use in a wide range of seed species with different morphological aspects. The equipment developed uses a non-destructive method, which complies with the security standards required by Sanitary Radiophysics. It is a useful tool for analyzing seminal structures, classifying seeds and/or grains in filled, unusable, physically damaged, or that contain eggs or living insects, and frequent and rapid monitoring with a high level of reliability in the diagnosis. Radiographic patterns for different species may be a useful tool to interpret quality assays in seed laboratories.

69. EFFECT OF FOLIAR DAMAGE CAUSED BY HALE IN CORN CROP (*Zea mays* L.)

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The objective of this trial is to assess foliar damage (FD) being simulated at different corn growth stages as caused by hale. The field trials were carried out in Zavalla (O 60° 53' LW; 33° 01' LS), Argentina in the 2007/08. DF consisted in tearing up all leaves in three parts, in R1 – 15 days, R1 and R1 + 15 days (Ritchie *et al.*, scale, 1989); and with varying intensity (breaking or not their main nervature). Were evaluated the number of spikes, percentage of grain moisture, yield (Y), spike weight (SW), percentage of stalk, weight of 1000 grains and test- weight were assessed. The data was analyzed ANOVA method and Tukey-Kramer's test. The lowest yields occurred in the treatments showing damage in the main nervature and when the crop was in R1. Treatment DF in R1 (breaking the main nervature) showed the highest yield decrease (25%); conversely, treatments DF in R1 – 15 days (not breaking the main nervature) and DF in R1 + 15 days (not breaking the main nervature) were the least affected ones (8%). A 25 % yield decrease parallels a 45% foliar area loss in R1 according to the table commonly used by insurance companies.

70. DYNAMIC OF *Cynodon dactylon* (L.) COLONIZATION IN AN ALKALINE SOIL

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The objective of this work was to study vegetative propagation of Bermuda grass by means of vegetal cover in a saline-alkaline soil, with or without a calcic amendment. The work site was a six hectares depressed area next to a fluvial course, tributary of Ludueña brook (Zavalla, Santa Fe). The zone has a bad drained soil complex with sodicity, salinity, strongly alkaline ph, temporary inundations and a natric B horizon. There were two treatments: without (T1) and with (T2) pH corrective (gypsum). Gypsum level was 1800 kg.ha⁻¹ (commercial product). Vegetal cover (percentage) and moisture, pH and electrical conductivity (EC) of the soil (0-10 cm) were evaluated between december 2007 and february 2008. In each treatment eight fixed square units for sampling (FUS) (0.25 m²) were delimited for cover evaluation. Soil samples were taken near to each FUS. All variables were evaluated approximately each ten days. Vegetal cover data were examined by means of analysis of variance with Repeated Measures in Time and t-Student test (p<0.05) was applied to analyse soil variables. There were vegetal cover differences between treatments (p<0.003), times (p<0.0001) and interactions time-treatment (p<0.0001). The lowest pH and electrical conductivity were observed in T2 (p<0.0001; t-Student test). The largest plant cover in T2 at the end of the experiment could be explained by the lower concentration of salt in the topsoil; this permitted a more adequate environment for vegetal growth.

71. FEMALE POPULATION, TOOTH LOSS RISK FACTORS

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Secondary prevention measures to delay tooth loss, as caries therapy and missing teeth replacement, are done in private or mutual services. Women with higher economical power will not suffer treatment interruptions, youngsters joining work will accede to restorative dentistry through mutuals, and those who lack coverage will go to public services. Our objective was to describe the health and oral hygiene and dietary habits epidemiological profile in three subpopulations. Age (15-45 years), oral state measured through the DMF-T Index (Decayed, Missing, and Filled-Tooth), pregnancies number, breast feeding, sweets and milk ingestion, and brushing habit were studied in patients in a private and two public services. Variance analysis, chi-square test, and correlation coefficients were applied. 337 women, 14.5% from the private and 85.5% from the public services were incorporated. A shorter D (r=-0.24, p<0.001), and a higher M (r=0.48, p<0.001), and F numbers (r=0.11, p=0.023) were found in olders. Pregnancies had positive association with M (p<0.001) and negative with F (p<0.001). Breastfed 87.5% of private and 98.8% of public (p=0.002). DMF-T and pregnancies association under 30 years was positive with D in private (p=0.04), and M in public (p<0.0001). Pregnancies were negatively associated with F tooth in older than 30 years (p<0.05). Every day private brushing was higher than that observed in publics (p=0.06). Those who consumed milk every day were the majority in private, and this modality was shorter among those at public (p<0.0001). In Rosario City public services pregnancies number, deficient diet and poor oral hygiene facilitate tooth lost.

72. PROCESSES OF PULP DEATH AND BIOFILM COMPOSITION

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Previous research showed that the processes of pulp death constitute the prevailing pathology in the population assisted at the Endodontics Department (FOR-UNR). As bacterial pulp death turned out to be the most frequent etiology of these processes, the microbial flora of the population under study was to be identified. From the patients with processes of pulp death diagnosis, 18 were randomly selected and they were asked to sign informed consents. The tooth cavity was opened and the pulp space was totally insulated. Thioglycolate broth was injected. The content of the crown two thirds was stirred with Hedström files and its content was aspirated. Approximately half of the content was inoculated in the anaerobic culture (T.A.B., Britania). The culture of anaerobic germs was performed in accordance with predetermined techniques. The equipment api 20A (Biomérieux) was used for identification. The other half of the aspirated material was inoculated in thioglycolate broth, and this process was copied 24 hours later in agar blood and agar chocolate. The germs were identified with the corresponding biochemical tests.

In some teeth, more than one microorganism was isolated. The prevailing aerobic microorganism isolated was *Streptococcus viridans* group (55%). The prevailing anaerobic microorganisms isolated were *Prevotella oralis* and *Veilonella parvulla* (21%). Endodontic infection is polymicrobial and includes both anaerobic and facultative bacteria. These findings often differ regarding the prevailing species involved, which may be the result of multiple factors such as host defense, drinkable water supply, diet, preventive actions, etc.

73. EPIDEMIOLOGICAL ANALYSIS OF THE ASSISTED POPULATION AT THE ENDODONTICS DEPARTMENT AT FOR-UNR

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In its strictest sense, human epidemiology has a special place in the overlap between biomedical sciences and social sciences. Epidemiology applies their methods and principles to the study of health and illness in certain human populations. It is considered as a basic science of preventive medicine and is a source of information for the elaboration of public health policies. This paper aims to analyze the patients assisted at the Endodontics Department at FOR-UNR and draw a profile of their prevailing endodontic pathologies. A database of clinical histories of endodontic treatments was built (n=1423), and the variables to study were determined: age, sex, tooth, pathology. For statistic analysis, the paired proportions test was used, through the SPSS Package for Windows - Standard Version 10.0.1. Upon analysis of the SEX variable, 61.2% were found to be female and 38.8% male. Regarding AGE, 48.1% were under 25. As for TEETH, tooth number 11 was the most affected (11.6%), followed by number 21 (11.1%) and number 12 (10.1%). Regarding the existing PATHOLOGIES, pulp gangrene prevailed. To conclude, most of the patients assisted were women under the age of 25, whose prevailing pathology affected the upper front area with processes of pulp death. This research shows the risk that the assisted population faces, not only from the dentistry perspective but also from the socio-psychological point of view.

74. EVALUATION OF MICROBICIDAL EFFECTIVENESS OF GREEN TEA EXTRACT IN MOUTHWASH FOR CHILDREN

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Green tea has demonstrated anticaries properties because its microbicidal activity against *Streptococcus mutans*. There are several mechanisms which explains the aforementioned action, for example the inhibition of the both acids production and the glucosyltransferase enzyme. The aim of the present work was to evaluate the microbicidal effectiveness of green tea extract administered as mouthwash for children. All the patients that attended the Odontopediatrics Service at the Faculty of Dentistry in Rosario between March and November 2004 were taken. They were divided into 3 (three) groups: A patients that only brush teeth, B brush teeth + green tea moutwash (twice a day); C brush teeth + placebo mouthwash. The clinical parameters O'Leary Plaque Index and CPO Index were evaluated at the beginning and at the end of the study. The collected data were used to fill the patient's clinic history. The statistical analysis of O'Leary Index revealed a significant differences between group A and B and between B and C, but not between A and C. The CPO values registered no significant statistical differences between the three groups studied (ANOVA p< 0,05). The green tea mouthwash is effective in the bacterial plaque in children, confirming its anticaries action.

75. TRANSLOCATION'S STUDY OF LAB ADMINISTERED TO YOUNG CALVES INFECTED WITH *Salmonella dublin*

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The level of security offered by the potentially beneficial strains must be demonstrated before incorporating them into a probiotic formulation as a food additive in rearing of young animals to verify their safety. Bacterial translocation is the passage of indigenous viable bacteria from the gastrointestinal tract to extraintestinal sites and can be used as a parameter not desired for evaluating a candidate as a probiotic safety criterion. The aim was to study the capacity of an inoculum of lactic acid bacteria (LAB) for translocated to internal organs of young calves experimentally infected with *Salmonella dublin* DSPV595T. Fifteen calves divided into 3 groups (C-G, control group, LAB-G, LAB group and LAB-L-G, LAB lactose group), with 5, 6 and 4 animals each, respectively were used. LAB's inoculum, formed by *Lactobacillus casei* DSPV318T, *L. salivarius* DSPV315T and *Pediococcus acidilactici* DSPV006T, resistant to rifampicin to differentiate it from the rest of the lactic intestinal flora, was administered together with the milk substitute. The LAB-G and LAB-L-G received a daily dose of 10⁹ CFU/kg body weight of each strain throughout the experiment. Lactose was provided to the LAB-L-G in doses of 100 g/d. The pathogen administration was performed on all animals at 11 day of trial with 2 10¹⁰ CFU. Necropsies were performed on 1 animal/group/d from day 11. Pieces of organs were obtained under aseptic conditions to determine inoculum and other *Lactobacillus* translocation. The results show that despite the high level of *Salmonella* received by the calves there was no translocation to internal organs by the inoculum probiotic. This finding provides a basis to confirm the safety of used strains.

76. BILE'S EFFECT ON GROWTH OF BOVINE ORIGIN *Lactobacillus salivarius* STRAINS

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In recent decades, the benefits of indigenous probiotic microbiota with capacity to inhibit the development of pathogenic bacteria in calves as an alternative to the use of antibiotics have been studied. One desirable characteristic of the selected strains is their resistance to the bile present in the intestine. The aim of this work was to study the effect of different concentrations of bile on the growth of 9 strains of *Lactobacillus salivarius* isolated from healthy calves. The strains growth was evaluated in MRS broth with different concentrations of bile: 0 (control), 1, 2, 3, 4, 5, 6 and 7%. The media were placed in 96 microwells plates and inoculated with 3 µl of active bacterial culture. Microplates were incubated at 37°C and the absorbance was measured at a wavelength of 540 nm 1 time/h for 12 h. The determinations were performed in triplicate. Six strains were able to grow at all concentrations of bile evaluated without differences with the curves of growth in MRS without bile. The other 3 strains had lower growth in presence of bile than control, and showed similar absorbances for different percentages of bile used. These results led to divide the strains in 2 groups according to their behavior: susceptible and not susceptible to the presence of bile. Thus, this method could be used to select the best microbial exponents for the conformation of a probiotic inoculum.

77. USE OF POSPARTUM VAGINAL INFUSIONS IN DAIRY COWS TO CONTROL POSPARTUM ENDOMETRITIS. PRELIMINARY RESULTS

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Bacterial endometritis is the most common cause of infertility in dairy cows. After the parturition the uterine environmental contamination takes place and its level depends on the balance between the bacterial proliferation and the defensive mechanisms of the animal. In 400 dairy cows, from 8 dairy farms, the response of a systematic postpartum treatment through the application of a vaginal way antiseptic (60 ml of iodopovidone 4%) was evaluated in a treatment group (TG), and in a control group (GC) without treatment. Cows were examined once between 20 and 30 days in lactation including external inspection, vaginoscopy, and transrectal palpation. In the TG, 27 cows demonstrated clinical signs of endometritis, corresponding to the 18% and in CG, 71 cows showed endometritis being 20.5% of them. These preliminary results mark a tendency towards a decrease of the clinical cases of endometritis in the treated cows with a vaginal antiseptic. The incidence of endometritis shows a wide variation between farms and are several risk factors that have been associated with uterine infection. Management measures to reduce postpartum endometritis will result in improving the reproductive and productive efficiency of the dairy farms.

78. BoHV-1 AND BoHV-5: ADVANTAGES AND DISADVANTAGES OF THE USE OF EXPERIMENTAL RABBIT MODEL FOR STUDIES ABOUT STRAINS PATHOGENICITY

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BoHV-5 is highly neuropathogenic in rabbits when intranasally inoculated. However, BoHV-1 only occasionally produces neurological signs and it depends on the strain employed. The nervous clinical signs appear on days 7-12 post-infection and result from brain lesions that include non-purulent encephalitis. The age of animals, the infective dose and the route of inoculation are also factors that determine the appearance of the nervous disease. In addition, the biological properties of strain are very important as the strains showed different ways of behaviour. This experimental model useful for the study of the pathogenic properties of BoHV-1 and BoHV-5. It is an economic model, easy to handle and allows recognition of differences in the biological behavior of strains and it is suitable for studying the symptomatology and the lesions caused mainly on the central nervous system. Among its disadvantages, it can be mentioned: a) the appearance of other diseases; b) the infectious dose employed should be carefully paid attention; and c) the absence of susceptibility should not be confused with mistakes in the inoculum preparation.

79. USE OF TYLOSIN IN THE TREATMENT OF EXPERIMENTAL SWINE HEMOPLASMOSES (EPERYTHROZONOSIS)
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Swine hemoplasmosis (SH) produced by *Mycoplasma suis* is characterized by hemolytic anemia. *M suis* was considered a richettsia (*Eperythrozoon suis*) for many years, so the disease was called eperythrozoonosis and the treatment was based on tetracyclines. Oxitetracyclin alleviate clinical signs, but treated pigs remain carriers of *M suis*. If SH is caused by a mycoplasma, antibiotics used in others mycoplasmosis can be effective. The aim of this study was to prove the effectiveness of tylosin in the treatment of experimental SH. Five pigs were splenectomized and inoculated with *M suis*. Presence of *M suis* in blood smears, compatible signology, variations in body temperature and hematologic values were controlled. Maximum bacteriemia, anorexia, hipertermia, icteric plasma and diminished blood values were detected on day 6 post-inoculation; at this time, 3 dosis of 10mg of tylosine base/kg of body weight were applied every 24 h. Tylosin was able to control the clinical signs with bacteria disappearing from the red blood cell surface 24 h after the first application. It was necessary to continue with tylosin administration in the feed (150ppm of tylosin tartrate/Tn) to avoid clinic reactivation in the esplenectomized pigs. The treatment with recommended dosis of tylosin was successful to control experimental SH.

80. SEROPOSITIVITY FOR *Leptospira interrogans* IN DOGS AND CATS FROM ROSARIO CITY AND ITS OUTSKIRTS
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Leptospira interrogans is the leptospirosis causing agent. The importance of dogs in the epidemiology of leptospirosis has been demonstrated but the role of domestic felines in this epidemiology is unknown. The aims of this work were: 1) to study seropositive rates for *L. interrogans* in dogs and cats from Rosario City and 2) to determine each of these species reactivity to the various *L. interrogans* serovars. Blood serum samples from 533 dogs and 102 cats from Rosario City and its outskirts were collected. The samples were kept at -20°C and studied with the Microagglutination Test against six *L. interrogans* serovars: *Pomona*, *Icterohaemorrhagiae*, *Canicola*, *Grippotyphosa*, *Pyrogenes* and *Castellonis*. Sera that reacted to a 1/50 or higher dilution were considered positive against one or more serovars. A 21% rate of seropositivity was detected in dogs. The prevailing serovars were: *Castellonis* (64%), *Canicola* (56%), *Pyrogenes* (34%) and *Icterohaemorrhagiae* (25%). The highest seropositive rates were detected in the suburban area and the southwest area of Rosario. A 4% seropositive rate was found for cats. Positive sera were from urban cats from the central, northern and southern areas of Rosario. The prevailing serovar was: *L. Pomona*. Results suggest that cats are less susceptible to leptospirosis than dogs.

81. SEMINIFEROUS TUBULE DIAMETER AND EPITHELIUM THICKNESS IN WEIGHT SELECTED MICE

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The two-way selection for body weight (P) performed during 50 generations differentiated fertility in two inbred lines (*s* and *s'*: downward and upward selected lines, respectively) originated from a CF1 mouse (*t*) population. In this work, the testicular structure of these mice was compared. Fifteen young adults (49 days of age) from each line were randomly selected. Testicles were removed, fixed, embedded in paraffin and section. The sections obtained were then stained with hematoxylin and eosin. The seminiferous tubule diameter and epithelium thickness were measured using a ruler graded for OM. The mean and the standard error for each variable were estimated and, by means of Turkey-Kramer HSD tests for multiple comparisons, differences between lines were explored. The results showed that diameter and thickness differed between the lines in the same way as the applied selection for body weight; thus, the males of the heavier line (*s'*) showed wider and higher seminiferous tubules than those of the *s* and *t* lines. The highest seminiferous epithelium may relate with the highest mitotic of spermatogonia, responsible for spermatogenic lineage. Finally, this could result in a higher number of spermatozoa of *s'* males observed in another paper.

82. DIFFERENT METHODS TO DETERMINE OXIDIZABLE CARBON IN FORAGES AND ITS RELATION WITH GAS PRODUCTION IN RUMEN *IN VITRO*

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The aim of this work was to determine oxidizable carbon concentration in forages and its relation with *in vitro* gas production. A wide variety of forages were employed: Alfalfa (*Medicago sativa*) pastures in two cuts, common oat (*Avena sativa*), brome grass (*Bromus unioloides*), White sweet clover (*Melilotus alba*); preserved forages: three bales of alfalfa; two rolls of fescue (*Festuca arundinacea*); foxtail millet hay (*Setaria italica*); common wheat (*Triticum aestivum*) straw, barley (*Hordeum vulgare*) fodder, and elephant panicgrass (*Panicum elephantipes*) from Paraná Islands were also included. Oxidizable carbon determination was performed with a conventional methodology based in combustion at low temperature (LOI), and others based on oxidization through dilution heat: Walkey and Black (WB); and Harris (HA), which differ among them in the reagent concentration. The median and (SD) to LOI, WB, HA and Gas (ml/g) were: 84.9 (7.11), 33.5 (2.7), 17.48 (3.0), 31.66 (25.9), respectively. The highest dispersion of the observed data for VC in HA (17.23 vs 8.3 and 8.2, to LOI and WB, respectively) indicates that this method is more precise in determining differences between samples. Gas production at the end of incubation was significantly correlated with the oxidizable carbon determined by the Harris technique ($r: 0.538$; $p: 0.0386$), though it was not so with the other methods (LOI nor WB). These results show that, out of the methods employed, HA is the most suitable for the identification of oxidizable carbon fractions that are available for microbial growth in rumen while the WB and the LOI methods determined fractions of oxidizable carbon unavailable for ruminal microorganisms during the first 24h of incubation.

83. METHANE PRODUCTION IN RUMEN BY PRESERVED FORAGES AND PASTURES FROM ARGENTINE PAMPA HUMID

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The aim of this work is to compare methane production in rumen *in vitro* by preserved forages and pastures from Argentine Pampa Humid, and to determine variables associated to methane production. The Preserved Forages studied were: bales and rolls of alfalfa, rolls of millet and maize silage (n:6) and the Pastures were: oat, wild oat, and three cuts of alfalfa (n:9). The concentration of oxidizable carbon was determined through two methods: Walkey and Black (WB) and Harris (HA); and through the *in sacco* (Orskov and McDonald, 1982) method the a, b and c fractions belonging to fast and slow speed degradation were determined. The *in vitro* incubations were performed in closed systems, the gas produced and CO₂ and CH₄ (mmol/l) were measured through gas chromatography. Results were analyzed through single factor ANOVA considering forage factor (preserved, pasture) and through multiple regression and correlation. The results for Gas (ml/gDM): 52.22 (±10.4) and 77.2 (±7.88); CH₄ (l/kgDRMS_{24h}): 18.3^a (±2,8) and 41.3^b (±7.7) and CH₄ (l/cow/day): 111^a (±25) and 297^b (±20); differ ($p<0.05$) between preserved forages and pastures respectively. Out of the multiple regression analysis, it can be highlighted that CH₄ (mmol/l) correlated with CO₂ (mmol/l) ($r: 0.925$; $p< 0.00$) and fraction a ($r: 0.597$; $p<0.018$). The 90% of CH₄ (mmol/l) was accounted for by CO₂ (mmol/l) and fraction a. Methane can be estimated through the equation: $y: -4.57(\pm 1.54) + \beta_1 * 0.531 (\pm 0.060) + \beta_2 * 0.127(\pm 0.047)$ where $y: CH_4$ (mmol/l); $\beta_1: CO_2$ (mmol/l); $\beta_2: fraction a$. Results show that the pastures were more methanogenic than preserved forages, that oxidizable carbon did not correlate with methane production though it did correlate with DRMS_{24h}. CH₄ concentration is determined mainly by CO₂ concentration and by DM fraction fast degradable in rumen.

84. DETECTION OF SUBCLINICAL ENDOMETRITIS IN DAIRY COWS THROUGH ENDOMETRIAL CITOLGY

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Subclinical endometritis is a pathology that affects the uterine mucus deteriorating animal reproduction and production. The aim of this work was to characterize this pathology in 50 dairy multiparous Holstein cows in a commercial dairy facility in Santa Fe Province. The samples were divided in lactation days into: 25-28; 29-31; 32-45 and in flow into: clear (Flow 0) and unclear without pus flocculus (Flow 1). Samples were collected from cervix employing adapted endocervical brushes (Medibrush XL, Medical Engineering Co, Ltd.). They were stained with panoptic dye and observed under 400X. Two hundred total cells were counted and epithelial cell and neutrophil percentage was determined; body temperature and condition were also evaluated. Neutrophil percentage for each category was: Flow 0 (25-28): 11.07; (29-31): 1.61; (<32): 0.31. Flow 1(25-28): 5; (29-31): 5.74; (<32): 9.60. Epithelial cell percentage was: Flow 0 (25-28): 88.43; (29-31): 98.31; (<32): 99.69. Flujo 1(25-28): 94.29; (29-31): 93.91; (<32): 90.30. Even though no significant differences were observed between all three categories per lactating day and for flow 0 and 1 ($P<0,05$), there seems to be an inverse tendency between cows with grade 0 and 1 indicating the presence of inflammation at different moments.

85. RHEOLOGICAL AND HEMATIMETRIC MODIFICATIONS IN RED BLOOD CELLS IN RACING EQUINES TREATED WITH VEGETABLE CRUDE EXTRACT

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Thirty % hydroalcoholic crude extract of vegetable lysates (VL) obtained from *Portulaca sp.*, *Agavia sp.* & *Opuntia sp.* foliar parenchyma, was used for clinical treatment of healthy, non-pregnant thoroughbred female racing equines. Horses were submitted to previous adaptation period before drawing blood samples making unnecessary forced restraint, & avoiding alterations due to stress. Objective: To study the modifications of cellular membrane fluidity, hematimetric indexes, & RBC deformability due to treatment. EDTA anticoagulated whole blood samples from 10 animals were analyzed. Samples were obtained at day 0 and 7 days after oral 50 ml VL extract. Assays: Hematocrit, Hemoglobin (Hb), RBCs count, Mean Corpuscular Volume (MCV), Mean Hb Corpuscular Concentration (MHCC). RBC deformability, through its inverse: rigidity index (RI), relating RBC filtration time to medium filtration time through 5µm diameter polycarbonate membrane. Membrane Fluidity (MF) by fluorescence polarization. Anisotropy coefficient (r), inversely related to MF was calculated. Statistics: Wilcoxon test for paired data. Results (median & range), show decreased RI (p<.05) before (4.80; 2.79-9.76) & after (3.62; 2.08-9.50) treatment. Decreased r before (0.21; 0.14-0.21) & after (0.18; 0.13-0.20) with VL (p<.05). MCV & MCHC: significant decrease (p<.05). Conclusion: LV treatment increases RBC deformability and cellular membrane fluidity.

86. EXPRESSION OF MHC-I AND MHC-II MOLECULES IN PIGS INFECTED WITH AUJESZKY'S DISEASE VIRUS

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Major histocompatibility complex (MHC) molecules are involved in antigen processing and presentation to T cells. MHC class I (MHC-I) molecules are found on all nucleated cells and their presence is necessary to allow recognition of virus-infected cells by cytotoxic cells. MHC class II (MHC-II) molecules are only expressed on antigen-presenting cells, such as dendritic cells, macrophages and B cells. Therefore, both MHC molecules are required for normal development of the host immune response. The aim of this study was to identify the expression of MHC molecules on immune cells during an acute infection by Aujeszky's disease virus (ADV) in the porcine nervous system. To address this issue, we used brain stem (BS) from pigs infected with ADV. Infected cells were detected by using a polyclonal antibody against ADV, and infiltrating immune cells with antibodies against T cells, B cells, macrophages, cytotoxic cells, MHC-I and MHC-II. In ADV-infected BS, expression of MHC-I and MHC-II was detected on cells compatible with lymphocytes and macrophages. However, when taking into account the large quantities of immune cells that infiltrated ADV-infected areas, the number of MHC-I positive cells was very low. Inhibition of MHC-I molecules is a strategy commonly used by other members of the Herpesvirus family, so it is possible that the low expression of MHC-I molecules detected among infiltrated macrophages and lymphocytes is the result of an immune evasion mechanism used by ADV.

87. ECONOMIC ANALYSIS OF "CAMPERO INTA" CHICKENS IN FAMILIAL MODULES

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"Campero INTA" chickens have been developed to self-supplying scarce resource families. They are slow growing birds kept in semi-captivity and fed on a natural way, producing a firm flesh and remarkable organoleptic characteristics. The aim of the work was to evaluate if a 500 bird module of "Campero INTA" chickens constitutes an economic unit. The initial investment was \$ 30,07 per housed bird (august 2.008, recycled materials), it included chicken house, perimetral closing of the yard, drinkers, feeding containers, covering and metal sheet reduction fence. When they were 70 day-old, their live-weight was 2,48 Kg. and 1,99 kg when eviscerated. The gross margin was \$ 8,42 per bird with an annual production of 2.064 birds. It is concluded that the evaluated module is among those of small range. It allows to cover the agreed levels by INDEC for the basic familial basket, which in July 2.008 was \$980. However such production size does not constitute an economic unit as the excedent is not sufficient to reinvest in the enterprise growing.

88. APOPTOSIS IN PERIPHERAL BLOOD LYMPHOCYTES OF COLORECTAL CANCER PATIENTS RELATED TO DISEASE STAGES

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Colorectal cancer is one of the major causes of death in our country. One outstanding fact, proposed by Schriber et al., is tumor immune escape where lymphocytes play a key role. The aim of this study was to determine and compare peripheral human lymphocytes apoptosis and the extent of cancer in patients without neoadjuvant treatment and a reference group without the disease. Twenty peripheral blood samples from both groups were analyzed using flow cytometry with annexin V and propidium iodide (BD Pharmingen) with a Becton-Dickinson cytometer. In early apoptosis annexin V binds to phosphatidylserine translocated from the inner to the outer leaflet of the plasma membrane, in later stages, iodide propidium penetrates the cell. We measured the percentage of lymphocytes in early and late apoptosis and staged patients considering clinical and pathologic criteria. An statistically significant difference (Mann-Whitney, p<0,05) was found in the percent of lymphocytes between patients (mean±sd AnV+/IP-; AnV+/IP+: 12,39±9,99; 2,54±1,32), and reference group (4,24±1,80; 1,22±0,66), being higher in advanced disease (19,04±13,91; 2,44±1,51) than early stages (8,80±4,65; 2,74±0,96). In colorectal cancer, the increased percentage of apoptotic peripheral lymphocytes could suggest a tumor mechanism to escape from the immune system, being a hurdle to overcome in formulating a truly effective therapy against this disease.

89. MICROBIOLOGICAL ASSESSMENT IN SALTING-RIPENING ANCHOITA (*ENGRAULLIS ANCHOITA*) AND FILLET IN OIL

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Halophilic bacteria, contaminants of the salt, are spread in foods during salting processes. In salting-ripening anchoita the maturation can take 8 months or more and the final product (fillets in oil) is made after this and has a shelf life of 12 months. Along the ripening the anchoita incorporate salt in the muscle up to the value of equilibrium and this flora is affected by different concentrations saline. The aim of this work was to identify the halophilic bacteria present in salting-ripening anchoita (*Engraulis anchoita*) and in its fillets in oil from fish salted plants of Mar del Plata city, Argentina. 10 samples of salting-ripening anchoita (8 months of maturation) and 10 samples of fillets in oil (10 months maturing over three months) were analysed. The studies were carried out in Gibbon agar plus salts, incubated to 37°C for 12 days. The microorganisms were identified by Gram staining and biochemical tests: oxidase, catalase, Triple Sugar Iron, carbohydrates, oxidation-fermentation, citrate, nitrates production, sulfate-indole-mobility (SIM), and lipolysis and proteolysis test. In salting-ripening anchoita was identified *Haloferax gibbonsii*, *Halobacterium* spp.; *H. Salinarum*; *Micrococcus halobius*, *M. varians* and in fillet in oil *M. halobius* and *Haloferax gibbonsii*. In final product natural selection of flora was promoted by interspecific competition between microorganisms homeostatic mechanism which was adapted to the highly saline.

90. MELATONINE AND ANTIOXIDANT ACTION IN RAT'S KIDNEYS SUBJECTED TO A PARTIAL HEPATECTOMY. INFLUENCE OVER THE ATPase MEMBRANE

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We assess the effect that melatonin had on the treatment partial hepatectomy (PH) with 65% resection of the liver. Melatonin (MEL) was injected i.p in a dose of 10 mg/Kg weight, from 48 hours before the surgery until the animal slaughter. We used male Wistar rats divided in 6 experimental groups (n=5): male controls (A); male controls + MEL (B); PH 4 days (C); PH 4 days + MEL (D), PH 7 days (E); PH 7 days +MEL (F). The evaluated parameters: activity of catalase (CAT)-Beers's method, glutathione reductase (GR)-Horn's method, lipoperoxidation (LPO)-Okhawa's method, and content of glutathione (GSH)-Ellman's method. The activity of ATP-ase by Koshier-Summer method's. Data were analyzed by ANOVA and expressed as the mean±SEM. LPO (nmolMDA/g tej h.) A: 226.6 ±4.2^a; B: 237.2±6.2^a; C: 398.6±33.8^b; D: 264.2±20.1^a; E: 260.7±0.8^a; F: 224.8±22.3^a. GSH(imol/g.tej.h) A: 2.53 ±0.1^a; B: 2.03±0.3^a; C: 1.65±0.1^b; D: 3.25±0.15^c; E: 2.15±0.09^a; F: 2.85±0.29^a. CAT (U/min.g prot): A: 127.9 ±4.3^a; B: 140.2 ± 8.8^a; C: 83.2 ±1.02^b; D: 90.3±5.6^a; E: 109.0±9.6^{abc}; F:115.3±2.3^c. There have not been changes in the GR activities. ATPase Na/K(umol Pi/ h/mg prot.): A: 19.41 ±0.5^a; B:18.9 ± 0.9^a; C: 10.7 ±0.9^b; D:18.3±0.2^a; E:17.11±0.8^a; F:19.1±0.3^a. Our results suggest that MEL, because of its antioxidant effects, protects the oxidative damage caused on the kidney by the hepatic resection injury.

91. DECREASE IN CHRONIC MALNUTRITION IN CHILDREN'S POPULATION AT RISK EN NEIGHBOURHOODS LACKING BASIC NECESSITIES

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Our aim was to examine the children's nutritional state from the same neighbourhoods in children between 5 and 14 years old and try to establish a connection with Ca and P urinary excretion. We worked with a sample of 184 children whose ages ranged from 5 and 14; they attend school dining rooms and the NGO Movimiento Los Sin Techo (MLST). The children were distributed in two groups depending on their ages: I: 5-9 years old (n=83) and II: 9-14 years old (n=101). Anthropometric parameters have been obtained in order to determine each child nutritional state. This, allowed us to identify that in group I there is 18.6% of Acute Malnutrition (AM) and 8.4% of Chronic Malnutrition (CM), and in group II there is 17.8% of AM and 9.9% of CM. We got renal excretion indexes of Ca and P with regards to creatinine (Cr) (mg/mg) in urine samples. Data were compared to reference values of children of the same age group with the adequate nutritional state: Ca/Cr 0.12 and P/Cr 1.06. There has been observed an increase in relation to P/Cr in both groups (p < 0,016, p < 0,025) regarding their controls, with no changes in Ca/Cr. The percentage of CM turned out to be below average to what was expected, (in previous research works the CM values were 30%) and only 7% of the children showed overweight or obesity. Even though, this does not agree with the process of nutritional epidemic transition observed in Latin America, it may be the result of the continuous work of the MLST, which prevents the children from moving on the chronic phase of the disease.

92. PARTIAL HEPATECTOMY AND OXIDATIVE STRESS. HEPATIC PROTECTIVE EFFECT OF MELATONIN IN RATS

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Experimental studies have shown as liver injury associated with oxidative stress (OE). They are known antioxidant properties of melatonin (Mel). The objective of this study was to analyze the antioxidants effects of Mel on OE caused by a partial hepatectomy (HP). We used adult male Wistar rats divided into six experimental groups: A: control; B: injected daily with Mel (10 mg / kg bw. ip); C: HP 4 days before the experiment, D: HP 4 days before the experiment and treated with Mel since two days before the HP and up to the experiment, E: HP 7 days before the experiment, F: HP 7 days before experiment and treated with Mel since two days before the HP and even the experiment. It was determined catalase (CAT), glutathione peroxidase (GSH-Px), lipoperoxidation (LPO.), activity of ATP-asa and content of glutathione (GSH). Different letters indicate difference between groups, P<0.05. LPO A: 260.17 ± 8.05a, B: 211 ± 5.59a, C: 771.02 ± 10.53b, D: 324.63 ± 39.26a, E: 260.21 ± 6.05 a, F: 236.12 ± 8.05 a. GSH A: 3.43 ± 0.14 a, B: 3.01 ± 0.12 a, C: 3.65 ± 0056 a, D: 3.64 ± 0.5 a, E: 3.50 ± 0.12 a, F: 3.56 ± a 0045. GSHPx A: 90.74 ± 0.48 a, B: 82.84 ± 7.05 a, C: 102.78 ± 9.09 a, D: 102.90 ± 13.31 a, E: 105.85^a ± 6.98a, D: 115.28 ± 2.92a. CAT A: 134.70 ± 3.4 a, B: 138.89 ± 3.4 a, C: 40.93 ± 10.68b D: 123.24 ± 10.31a, E: 119.3 ± 35.61 a, F: 113.3 ± 29.61 a. ATP-asa A: 5.70 ± 0.3a, B: 5.8 ± 0.3 a, C: 3.05 ± 0.18b, D: 4.44 ± 0.31c, E: 4.25^a ± 0.14c, F: 4.36 ± 0.11 c. The HP 4 days significantly decreased the CAT activity and increased the LPO, demonstrating in this way the presence of OE. In addition, the activity of ATP handle decreased significantly at 4 days of HP. All values are normalized to 7 days of HP. Treatment with Mel significantly improves the damage caused by HP to 4 days showing its protective effect. These findings might suggest that the deleterious effects on this membrane enzyme in regenerating livers might be linked to OE caused by liver injury.

93. NARROW SENSE HERITABILITY FOR ANTIOXIDANT CAPACITY, TOTAL PHENOL AND ANTHOCYANIN CONTENT, AND COLOR PARAMETERS IN SWEETPOTATO (*Ipomoea batatas* (L.) Lam.)

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The antioxidant capacity (CA), which relates in sweetpotato with the total phenol (FT) and the anthocyanin (A) contents is an important character for disease prevention. The objective of this experiment was to estimate narrow sense heritability (h^2) of CA, FT, A and of objective color parameters (luminosity (L), chroma (C), and hue angle (h°)) in a population of sweetpotato. Thirty parent clones were grafted onto *Ipomoea carnea* var. *Fistulosa* rootstocks growing in a greenhouse. Each parent was replicated five times (one plant per replication) in a completely randomized design. Seed was collected from each parent. Ten plants from seeds of each parent were planted along with plants of the parents in completely randomized plots. Four sweetpotatoes per clone were measured for CA (DPPH method), FT (Folin-Cicolteau method) and A (Fuleki and Francis method). A chromameter was used to measure L, C, and h° . Parent-offspring regression (POR) and half-sib analysis (HAS) were used to estimate h^2 . Estimates of h^2 were high for CA using POR (93%), and medium using HAS (49%). FT h^2 estimates were medium-high (58% and 57% for POR and HAS, respectively), and those for A were medium-low (29% and 41%). Estimates of h^2 for color variables ranged from 64% to 73% using HAS, and from 32% to 50% using POR. These results lead to the conclusion that, with the techniques and population used in this experiment, acceptable advances in selection for CA, FT, and color variables are expected.

94. IDENTIFICATION OF ALLELES FROM POLYPHENOL OXIDASE GENES IN SWEET POTATO (*Ipomoea batatas*)

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Polyphenol oxidases (PPOs) catalyze the oxidation of phenolic compounds into quinones, which in turn suffer subsequent reactions resulting in brown pigments. In vegetables, the activation of PPOs leads to enzymatic browning, which causes considerable losses in quality and nutraceutical value. In *Ipomoea batatas*, two PPO isoenzymes (39kDa IbCO and 40kDa IbCO) expressed on tuberous roots were described so far. Our final goal is to develop functional markers for PPO genes to be used in our breeding program. In this work, we present the identification of alleles from 39kDa IbCO and 40kDa IbCO genes in sweet potato genotypes that showed low or high PPO activities on tuberous root. By a combination of *in-vitro* and *in-vivo* assays, we investigated PPO activity on 7 genotypes of diverse origin (Morada-INTA, Beauregard, Arapey, CIP4, CIP18, CIP38 and 23.1). The genotype with the highest PPO activity (Morada-INTA) showed 3 times more *in-vitro* activity than the lowest one (CIP4). These genotypes were selected to clone PPO genes fragments. Nucleotide sequences of sweet potato PPOs were aligned and specific primers for a 500bp region of the active site were designed. PCR amplified fragments were cloned into pCR®4 TOPO vector. Polymorphic clones were identified by enzymatic restriction (TaqI) and sequenced. Bioinformatics analysis of the sequences suggests that three correspond to alleles of 39kDa IbCO and one correspond to an allele of 40kDa IbCO. These preliminary results represent the first step toward the development of functional molecular markers for PPOs of *Ipomoea batatas*.

95. DISCRIMINANT ANALYSIS TO CHARACTERIZE PATIENTS WITH METABOLIC SYNDROME

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Discriminant Analysis (DA) is a technique to classify future observations in mutually exclusive and collectively exhaustive groups. Membership to a certain group is determined by a categorical variable, which is a dependent variable. Independent variables, known as the "best" discriminator between the groups. Discriminant functions are linear combinations of the independent variables. This paper analyzes if the presence of metabolic syndrome (MS) is related to the development of left ventricular hypertrophy (LVH) in hypertensive patients. The definition of MS is complex. It incorporates three or more risk factors: abdominal obesity, elevated triglycerides, low HDL cholesterol, blood pressure and hyperglycemia during fast. The presence of these risk factors can produce cardiovascular disease, among them LVH. In this paper, we applied the DA technique to information from 128 hypertensive patients treated at the "Británico" Hospital, in the city of Rosario from 1996 to 2004. The collected variables were: age, gender, weight, height, index of eccentricity, index of corrected LVH mass (IM2), body mass index, systolic blood pressure, diastolic blood pressure, MS, LVH, glycemia, uraemia, total cholesterol, HDL cholesterol, triglycerides and uricemia. For each gender we performed a DA and we concluded that hypertensive men with LVH present a greater proportion of MS, more elevated IM2, low uraemia levels and were younger among the group studied. Hypertensive women with LVH present a greater proportion of MS, elevated IM2 and were heavier among the group in study. The probabilities of correct classification resulted similar for both sexes (0.84 in women and 0.82 in men).

A			Caruso C	60	Frizzo LS	75,76
Acebal MA	58	Castelli D	64	Fulgueira C	46	
Acosta I del L	48	Castellini H	50	G		
Aguirre MC	34	Castro G	30	Gaggiotti M	46	
Aimaretti S	31	Catalani G	85	Galetti L	66	
Alemañ N	86	Cecarelli N	60	Gallego M	88	
Alesandrelli G	69	Cechetti S	58	Gallo C	68	
Alet NA	23, 24	Ceconi I	58	Galosi CM	78	
Allemandi D	12	Cereda Y	44	García Borrás S	47, 48, 49, 55, 56	
Almará AM	51	Ceruti MJ	44	García Laplaca M	56	
Altube L	54	Cesolari JAM	2, 3, 4, 5, 30	García M del C	38	
Alvarez L	16	Chapo G	27	García MF	72, 73	
Ameztoy IM	89	Charmandarián A	77	García S	45	
Amigot SL	46, 57	Clivio JA	74	Garnero N	88	
Anibalini V	63	Cogo ME	51	Garrote NLM	5	
Anthony LM	78	Comba E	79	Gayol M del C	11, 19, 23, 24, 31	
Aquilanti Y	64	Comese RV	62	Gentile N	80	
Arango M	68	Conti ME	62	Gerrard G	9	
Arestegui M	80	Contini M del C	90, 91, 92	Geuna J	26	
Armendariz M	34	Corbera M	39	Ghersevich SA	51	
Aromando RF	74	Corbino GB	93, 94	Gibbons R	68	
Arriaga SMM	51	Corte MB	9	Girolami H	53	
Avataneo E	76	Cotruelco C	47, 48, 49, 55, 56	Gomez E	62	
B			Craviotto R	68	González M	90, 91
Balsa C	69	Crossetti D	16	González A	69	
Basílico JC	46	Cruciani M	69	Gonzalez D	11	
Bazzoni G	28	D			González J	45
Bearzotti M	51	D'Arrigo M	39	González MA	92	
Bedini OA	3	D'Esposito R	46	González J	16	
Bellú S	45	D'Ottavio AE	25	Gualtieri C	80	
Beloscar J	39	Dagatti MS	35	Guglielmone A	79	
Bernardi S	81	Daier V	43	Gurni A	16	
Berra H	33	Dalla Santina RO	75	Gutierrez S	19	
Bertola Compagnucci A	35	Dalmau V	14	H		
Bertoluzzo SM	85	Daniele SM	51	Henzenn HI	75	
Bertorini G	6, 7	D'Arrigo M	54	Hernández G	28	
Bertozzi E	75, 76	De Gaudio M	43	Hinrichsen Lucila	6, 7, 8	
Beson P	70	Del Giudice A	22, 29	Hisano N	26	
Besso R	80	Delannoy M	54	Holotte D	13	
Bianchi J	61	Di Loreto V	13	Hure E	42	
Bianchi M	66	Di Masso RJ	6, 7, 20, 21, 22, 29	K		
Biasoli MS	57	Di Pego J	63	Kohli A	71	
Biava H	43	Di Sapio O	65	Krall E	84	
Biondi C	47, 48, 49, 55, 56	Disetti ME	44	L		
Bisaro V	60	Dominighini A	16	Labourdet V	11	
Bollini A	28	Dottavio AM	20, 21	Lagostena G	21	
Bottai H	46	Dottavio ME	85	Laudanno OM	3, 4	
Bouvet BR	41, 53	Doyen P	69	Lebensohn N	54	
Breccia G	63	Drab SA	87	Leiva M	46	
Brion C	78	Dumas D	50	Leiva M	26	
Brogliatti G	81	E			Leiva R	11, 19
Brun L	15	Ensinck MA	39	Leroux B	9, 10	
Buccalossi GG	6	Escovich L	40	Lerro F	30	
Bulacio L	40	F			Lioi S	39
Burone J	88	Faienza H	82, 83	Lombarte M	13	
Busaniche G	88	Faini ME	74	López C	40	
Busmail LI	5	Falcinelli N	64	López JP	32	
Busso M	8	Feldman RN	41	López M	86	
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