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Abstract Book

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A01

EVALUATION OF ORAL LESIONS COEXISTING WITH FUNGAL INFECTIONS IN ONCOHEMATOLOGICAL PATIENTS

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Patients with oncohematological conditions, including leukemia, lymphoma, and multiple myeloma, may present with oral manifestations related to either the underlying disease or its treatment. This study aimed to determine the presence of yeasts in oral lesions attributed to fungal infections in these patients, identify the fungal species isolated, and evaluate their susceptibility to commonly used antifungal agents. The study population comprised patients with confirmed diagnoses of acute and chronic leukemias (myeloid and lymphocytic), Hodgkin's lymphoma, non-Hodgkin's lymphoma, and multiple myeloma. A total of 68 patients (42 men and 26 women) underwent a stomatological examination, medical history review, collection of relevant clinical data, and oral swabbing for mycological analysis, which included direct examination, lactophenol cotton blue staining, and cultures. Fungal isolates were identified based on micromorphological and physiological characteristics. For antifungal susceptibility testing, nystatin was selected as the first-line agent due to its fungicidal properties, topical application advantage, and the contraindication of certain azoles in oncology patients. Among the patients studied, 54 (68%) exhibited oral mucosal symptoms, of whom 22 presented symptoms pre-treatment, 26 during treatment, and 6 in both phases. A total of 33 samples were collected from patients with pre-treatment symptoms, and 41 from patients with intra-treatment symptoms (6 patients were sampled more than once, and their samples were collected in both phases). About pre-treatment group, yeast strains were isolated in 14 cases, including 13 isolates of *Candida albicans sensu lato* (all susceptible to nystatin) and 1 isolate of *Nakaseomyces glabratus* (*Candida glabrata*), which was also susceptible to nystatin. Regarding intra-treatment group, yeast strains were recovered in 20 samples, including 15 isolates of *Candida albicans* (all susceptible to nystatin), 1 isolate of *Candida tropicalis* (susceptible to nystatin), 3 isolates of *Pichia kudriavzevii* (*Candida krusei*), all susceptible to nystatin, and 1 isolate of *Kluyveromyces marxianus* (*Candida kefyr*). Susceptibility testing was not performed for *K. marxianus*, as it is considered a normal probiotic component of the microbiota, likely resulting from recent ingestion by the patient. The most frequently recovered species was *Candida albicans*, which is the predominant member of the normal fungal microbiota of the oral mucosa and a common cause of endogenous infections in these highly susceptible patients. A multidisciplinary approach is essential for managing these conditions, as it facilitates early diagnosis and timely initiation of effective treatments, thereby improving patients' quality of life. Maintaining oral health is fundamental to preserving systemic balance, and disruptions to this balance may prolong recovery times.

A02

INSTITUTIONALIZING TIES, STRENGTHENING INITIAL TEACHER TRAINING

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This initiative arises from the demand of natural science teachers working in secondary schools in the city of Rosario and the surrounding region, whose institutions lack laboratories as workspaces. In response to this situation, they contacted us to request a "visit" to our facilities, becoming an opportunity to bring our students closer to the reality of schools and teaching practice. The institution proposes four annual meetings with secondary school students, two per semester. The invitation is sent via an email, where each school provides relevant information for planning the activities and the dynamics to be used. There are two time slots available for each shift, with each visit lasting a total of two hours. The organization and management of the groups are handled by students from the secondary education teacher training program in Biology, in descending order of years of training, with the final meeting coordinated by first-year students. The dynamics, divided into two parts with group rotations, consist of simple practical activities and active participation in the laboratory, as well as the approach to playful experiences related to sexual education and environmental education. In the design of the laboratory experiences, the content proposed by the jurisdictional designs of the province of Santa Fe is taken into account, addressing the needs of the participants. Participation in these activities allows future teachers to approach the field of practice in a more relaxed environment, supported by the teachers in charge of their training and laboratory assistants. In this way, the use of the laboratory is prioritized as an important didactic resource for teaching natural sciences. These visits not only enrich the knowledge of young students but also bring significant benefits to future teachers and the participating educational institutions. For secondary students, it provides access to a practical learning space, aiming to spark interest and curiosity about science in order to improve the understanding of content. For teacher training students, it represents an opportunity to put their knowledge into practice in a controlled and supported environment, acquiring tools for their transition into the teaching role. The responsibility of organizing and leading the activities gives them direct experience in planning, group management,

and the application of didactic resources in a real setting. This fosters confidence in their pedagogical skills and provides a clear perspective of the educational reality they will face in their future careers. For their part, the teachers have the opportunity to observe their students in action, allowing them to offer more personalized support and address individual needs, incorporating new methodologies and didactic approaches that arise from the experience to enrich their own professional practice. This reinforces their commitment to comprehensive and quality education. The collaboration between different educational institutions promotes a more dynamic and reflective learning environment, in which both students and teachers benefit from a constant exchange of knowledge and experiences.

A03

FREQUENCY OF SOMATIC MUTATIONS OF THE KRAS GENE AND TUMOUR LOCATION IN PATIENTS WITH COLORECTAL CANCER FROM A PUBLIC HOSPITAL IN ROSARIO

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Background: KRAS is the most frequently mutated proto-oncogene in cancer. More than 80% of KRAS mutations are located in codon 12, while around 14% are located in codon 13. These mutations confer resistance to treatment with monoclonal antibodies directed against the epidermal growth factor receptor (EGFR). Recently, new drugs specifically targeting the KRAS G12C mutant are being developed as inhibitors of its oncogenic activity, which have shown promising results in clinical trials. Detection of the KRAS gene mutation status in patients with metastatic colorectal cancer is becoming increasingly important for choosing the correct therapeutic approach. Most studies on KRAS mutations have been performed in European and American populations, while there is little information on the Latin American population, especially in Argentina. Objective: To report the frequency of mutations in codons G12 and G13 of the KRAS gene in Argentine patients with colorectal cancer (CRC). Materials and Methods: A cohort of 93 patients with CRC from the Provincial Hospital of Rosario, aged between 30 and 91 years (64.5% men), was studied. The KRAS mutation status was analyzed using a droplet digital PCR (ddPCR) strategy, developed in our laboratory. Results: Thirty-nine patients (44.3%) presented mutations in KRAS. The most common mutation was G12D, with a frequency of 56.8%, followed by G13D (25.5%), G12C and G12V (11.4%), G12R (4.5%) and G12S (2.3%). The G12A mutation was not detected. The distribution of tumors in the left colon, right colon and rectum was 61.3%, 27.9% and 10.7%, respectively, which shows a concordance with the distribution of KRAS mutations in these tissues (61.4% in left colon tumors, 27.3% in right colon and 11.4% in rectum). This indicates that mutations are not present in a significantly higher percentage in a specific region of the colon. Regarding the tumor stage, a higher presence of mutations was observed in the most advanced stages, with 39.5% in TNM 1+2 and 54.0% in TNM 3+4. Conclusions: The results of this study on the frequency of KRAS gene mutations are similar to those reported in the Chilean population (37%) and higher than those found in the Peruvian population (16.7%). Compared to other regions, the frequencies we observed are similar to those of European (40%) and North American (45%) populations, but higher than those reported in Asians (22%). Regarding the most common mutation, we found a higher frequency of the G13D variant than in other studies.

A04

INFECTION BY *Leptospira* spp. IN BIRDS

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Leptospirosis is a bacterial, zoonotic disease endemic in Argentina. The pathogenic species of *Leptospira* spp. include group serovars that vary geographically. When infected, animals can act as reservoirs, releasing leptospires in their urine. Birds are susceptible to infection and can act as maintenance hosts. The objective of this work was to detect the presence of antibodies against *Leptospira* spp. in hens and wild birds from different environments in Argentina. A total of 128 blood serums were analyzed: 52 from hens (*Gallus gallus domesticus*), Negra INTA, layers from 30 to 50 days of age, from the National Institute of Agricultural Technology (INTA); and 76 wild birds from the Mendoza Ecopark: 3 crowned eagles (*Buteogallus coronatus*), 16 black-chested buzzard-eagle (*Geranoaetus melanoleucus*), 5 variable hawks (*Geranoaetus polyosoma*), 1 Eurasian eagle-owl (*Bubo bubo*), 18 crested caracara (*Caracara plancus*), 7 chimangos (*Phalcoboenus chimango*), 5 condors (*Vultur gryphus*), 16 Harris's hawk (*Parabuteo unicinctus*), 1 scarlet macaw (*Ara macao*), 1 peregrine falcon (*Falco peregrinus*), 2 chattering lorries (*Lorius garrulus*) and 1 greater rhea (*Rhea americana*). Both populations were in contact with rodents. Sampling was carried out with the consent of the owners and/or managers. Blood samples were obtained by venipuncture and the serum was analyzed. For the

microagglutination test (MAT), the reference strains used were from: Pomona Pomona, Icterohaemorrhagiae Copenhageni M 20, Canicola Canicola Hond Utrech IV, Australis Bratislava Jez Bratislava, Pyrogenes Salinem, Sejroe Hardjo type Prajitno Hardoprajitno, Autumnalis Autumnalis Akiyami A, Bataviae Bataviae Swart of Leptospira interrogans; Grippotyphosa Moskva V and Cynopteri Cynopteri 3522 C of L. kirschneri and Ballum Castellonis Castellón 3 and Tarassovi Tarassovi Perepelitsin of L. borgpetersenii. The serum dilution used as a cutoff point was 1:25. Of the total number of birds, 78 (60.94%) were found to be seroreactive to Leptospira spp. in hens, 51 (98%) seroreactive birds were detected, 14 (27.46%) presented antibodies to Castellonis serovar, with titers of 1:25 to 1:100. In the remaining 37 (72.54%), cross-reactions were detected, with 19 of them being between Castellonis, Bratislava, Tarassovi and Grippotyphosa, with the highest titer of 1:100 for the first one. In wild birds, 27 (35.52%) seroreactive birds were detected, of which 11 (40.74%) reacted to one serovar: 7 to Castellonis, 3 to Autumnalis and 1 to Grippotyphosa with a titer of 1:25; the remaining 16 (59.26%) gave cross-reactions, with 11 sera being between Castellonis and Autumnalis. The highest titer was 1:100 for Castellonis in a lory and for Autumnalis in a chimango. A high percentage of seroreactivity to Leptospira spp. was found, mainly in chickens. The most frequently detected serovars were Castellonis and Autumnalis. Cross-reactions could indicate exposure to different serovars or an active infection. In wild birds, they suggest a potential role in the dissemination of leptospires.

A05

HETEROPHIL/LYMPHOCYTE RATIO AS A STRESS INDICATOR IN CAGED AND FLOOR-HOUSED LAYING HENS

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Eggs are a highly nutritious food widely used in the food industry. Interest in the welfare of laying hens (*Gallus gallus domesticus*) has increased, and some studies suggest that cage housing systems provide inadequate welfare for hens. One way to assess whether birds have been exposed to constant stressors is by determining the proportions of their leukocytes. Heterophils are white blood cells that play a crucial role in the avian immune system. They fall within established parameters and maintain a relationship with lymphocytes. Their numbers increase in peripheral blood in response to inflammatory processes, infections, and secondarily to elevated cortisol levels, a hormone that rises in the bloodstream during stressful conditions. Many productivity losses in poultry farming originate from stressful situations for the animals. The objective of this study was to parameterize the heterophil/lymphocyte ratio in hens housed in cages and on the floor and to determine whether there are differences between the two populations. A total of 500 Lohmann Brown hens (Lohmann, 2015) were used. Half of them were housed individually in cages measuring 30 × 50 × 37 cm (width, depth, height) in a 4 × 16-meter poultry house, arranged in three-tier cage lines, referred to as the Cage Group (CG). The other half were housed in another poultry house measuring 20 × 10 meters, where they were kept on the floor with access to manual nest boxes for laying, referred to as the Floor Group (FG). Both groups had identical health and feeding conditions, except for management differences due to their housing system. Twenty blood samples were randomly collected from each group from the brachial vein (2 mL) using 3 cm syringes and 25G ½ sterile needles. The blood samples were smeared on glass slides and subsequently stained with May-Grünwald Giemsa (MGG). The heterophil-to-leukocyte ratio was calculated by counting 100 white blood cells in the smear. The results obtained were 1.01 ± 0.12 for the CG and 0.87 ± 0.11 for the FG. A statistical analysis using a Student's t-test for mean comparison ($P < 0.05$) determined that there were no statistically significant differences between the groups. It can be concluded that, in this case, housing conditions did not affect the heterophil/lymphocyte ratio, indicating that floor-housed hens experienced the same level of stress as caged hens.

A06

ACCELERATED PRODUCTION OF NEW LENTIL (*Lens culinaris* Medik) RILs USING AN EFFICIENT IN VIVO SPEED BREEDING SYSTEM COUPLED TO THE SSD METHOD

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Development of new lentil varieties using conventional field breeding requires six/eight years to release cultivars. The aim of this work was to obtain new lentil recombinant inbred lines (RILs) quickly and efficiently from six parental lines using a Speed Breeding system (SP) with a single seed descent (SSD) methodology. Three crosses (C₁-C₃) were performed with elite parents in a chamber at 22h light and 20±2°C. The F₁ obtained was sown in a greenhouse to obtain a greater quantity of F₂ seeds. The cycles from F₂ to F₃ were carried out in the chamber using the SSD method. Sixty F₂

seeds from each cross were sown in speedling containing perlite and a nutrient solution was added. The pods were harvested when they showed signs of yellowing, immature seeds were immediately sown. This procedure was repeated until reaching F₃. For each cross and generation cycle, the days to flowering (DF), days to harvest (DH) and the number of generations obtained in one year (GY) were evaluated. The efficiency (E) of the SP was calculated for each cross: (N° of RILs obtained/N° of F₂ seeds sown) x 100. For all crosses and generations DF was 35 days, pods showed yellowish coloration at 22 days, so the DH was 57. In all generations, the seeds derived from C₂ and C₃ took 5.5 days to germinate, while those from C₁ showed a later germination (16.5 days). Therefore, C₁ reached 5 GY while C₂ and C₃ 6 GY and the E were 82%, 77% and 98%, respectively. The combination of crosses in a chamber with the application of the SP method coupled to SSD allowed us to obtain RILs in an efficient manner, reducing the time (1.5 years), compared to the conventional field method (6/8 years).

A07

MORPHOLOGICAL CHARACTERIZATION IN LARVAE OF SILKWORM LINES (*Bombyx mori* L.)

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Sericulture is the production of silk from the breeding of worms of the *Bombyx Mori* L. During the larval stage, these worms feed exclusively on mulberry leaves (*Morus sp.*), so the availability of this plant is essential in the programming of activities. In recent years, in Argentina, this activity has gained relevance as an alternative to sustainable production, compared to agricultural productions with a greater environmental impact. It is believed that this practice began in China and spread across different regions, giving rise to different races: Chinese, Japanese, European, Tropical and Korean. Within these races, a characteristic that differentiates them is the presence or absence of larval markings: ocular (mo), crescent (mc) and stellar (me). Worms with markings are considered normal, like the wild type, while those without markings are called flatworms, which are very common in pure Chinese breeds. The evaluation of productive characteristics and their genetic improvement are of fundamental importance for the development of the sector. The objective was to describe and compare silkworm larvae (*Bombyx Mori* L.) to lines available in the region through morphological characterization. The work was carried out at the facilities of the Sericulture module of the National University of Rosario (UNR) located in the Apiculture and Sericulture Sector of the "Libertador Gral. San Martín" Agricultural School in the city of Casilda, Santa Fe. The following genetic material was used, available and adapted to the region: A1; A2; A3; A4; A5; A6; A7, A8 and B. The test began with the incubation (27 ± 1 ° C and 75 ± 5 % humidity) of the eggs of the genetic material. In the larval stage they were distributed in plastic boxes of 60 cm by 40 cm with a bottom covered with absorbent paper, containing 150 individuals each. They were fed four times a day with mulberry leaves. For the determinations, a random sample of 30 fifth-instar larvae of each line was taken. The following marks were recorded on the larvae: ocular (mo), crescent (mc) and stellar (me) and their weight (g), length and width (cm) were measured. The data obtained were studied by ANOVA and Duncan test ($P > 0.05$). The proportion of spots in the larvae was 100, 100, 96, 93, 86, 63, 73, 100 and 100 % in A1, A2, A3, A4, A5, A6, A7, A8 and B, respectively. The weight (g) of the larvae was A1 3.07; A2 3.30; A3 3.19; A4 3.58; A5 3.86; A6 3.16; A7 3.72; A8 3.42 and B 3.59. The length of the larvae was 6.52; 6.63; 6.64; 6.89; 6.97; 6.5; 6.98; 6.81 and 6.83 cm, and the width was 0.73; 0.78; 0.76; 0.74; 0.77; 0.74; 0.73; 0.71 and 0.81 cm, respectively for A1, A2, A3, A4, A5, A6, A7, A8 and B. Differences between lines ($P < 0.05$) were observed, and exceeded the average value in both weight (3.43 ± 0.53) and length (6.75 ± 0.45) of the larvae in lines A4, A5, A7, A8 and B. The evaluated genetic material presented heterogeneity in larval pigmentation. In addition, line A6 showed some individuals with an absence of the three types of spots. The lines characterized by their larval morphology could come from diverse genetic origin due to the proportion of spots, and also presented variability in their body conformation.

DETERMINATION OF CANNABINOID IN CALLUS FROM TOPS OF *Cannabis sativa* CULTIVATED *IN VITRO*

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The female inflorescences of *C. sativa* develop clusters of spiciform cymes with 5 to 8 sessile flowers located in pairs in the axil of a leafy bract. They have a membranous perigonium, they are covered with a “perigonal bract”, covered with trichomes, areas where cannabinoids such as tetrahydrocannabinol (THCA) and cannabidiol (CBD) are synthesized, of great importance due to their therapeutic and medicinal properties. Using tissue culture, it is feasible to regenerate calluses (masses of undifferentiated tissue) from the inflorescences, whose cells would produce cannabinoids. The objective was to evaluate the presence of cannabinoids in callus obtained from the *in vitro* culture of *C. sativa* top fractions. The culture medium was Murashige and Skoog with 0.5 mg.L⁻¹ of meta-topolin and 30 g.L⁻¹ of sucrose. The pH was adjusted to 5.8 and solidified with 8 g.L⁻¹ of agar. 30 top segments disinfected with 3% NaClO with Tween 20 were seeded for 10 minutes. The growth conditions were 27± 2°C with a 16-hour photoperiod. The THC and CBD content was determined by High Precision Liquid Chromatography (HPLC). The percentage of contamination and callus development were evaluated at 7 and 21 days from *in vitro* sowing (DSI). The contamination percentage was 3%, 90% of the explants developed calluses after 15 days. At 95 DSI, the presence of 0.07% THCA was determined. The species responds to *in vitro* cultivation, it is feasible to obtain and multiply calluses with THCA from tops. It is necessary to use areas with a greater amount of trichomes (bracts) for callogenesis and reduce the hours of light so that the explants maintain the reproductive state, thus increasing the concentration of THCA.

A09

ALTERATIONS OF SPERM MEMBRANE IN YOUNG MEN WITH VARICOCELE

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The sperm membrane (SM) or plasmalemma is a dynamic structure involved in molecular recognition and transport. An intact SM is essential for proper capacitation and acrosomal reaction, and thus for fertility. Varicocele is a testicular condition affecting 15% of young men. The objective of this study was to assess the integrity of the SM in patients with varicocele compared to men without the condition. Semen samples from 19 patients were studied, 12 healthy, potentially fertile donors as Group C, and 7 patients with varicocele as Group P. A semen analysis was conducted following the 2021 WHO criteria. The diagnosis of varicocele was based on physical examination and confirmed through ultrasound studies. SM integrity was assessed using the hypoosmotic swelling test (HOST), where semen is incubated with a 150 mOsm/L solution for 40 minutes at 37°C. If the SM is intact, sperm cells exhibit swollen tails, whereas disrupted membranes result in elongated tails. In Group P, 6 out of 7 patients (85.7%) with varicocele showed an absence of tail swelling, indicating compromised SM integrity. In contrast, all individuals in Group C demonstrated normal HOST parameters. Surgical treatment of varicocele, varicocelectomy, has been shown to improve semen quality and alter the expression of seminal plasma proteins. We propose evaluating SM integrity in patients with varicocele both pre- and post-surgery as an additional diagnostic tool to predict fertility outcomes.

A10

STUDY OF ERYTHROCYTE DEFORMABILITY AND BLOOD VISCOSITY IN PATIENTS DIAGNOSED WITH HEMOPHILIA A WITHOUT PROPHYLAXIS WITH FACTOR VIII REPLACEMENT COMPARED TO HEALTHY INDIVIDUALS

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Hemophilia A (HA) is a hereditary and congenital bleeding disorder characterized by mutations in the X chromosome, leading to a decrease or absence of functional activity of coagulation factor VIII (F8). HA patients receive two basic treatment regimens depending on F8 levels and clinical manifestations: on-demand therapy, where treatment is

administered only in response to bleeding events or procedures that may cause hemorrhage, and prophylaxis, where F8 is administered regularly to maintain safe levels and prevent bleeding complications. Beyond its hemostatic role, F8 also contributes to cellular and tissue metabolism. The scientific literature describes the influence of F8 on erythrocyte metabolism, suggesting that its rheological behavior may be affected by the absence of this factor. The objective of this study is to assess erythrocyte deformability (ED) and blood viscosity (BV) in HA patients without F8 prophylaxis compared to individuals without HA. This study focused on patients with moderate or severe HA to ensure a prolonged period with F8 levels below 5%. Both patients and healthy volunteers signed an informed consent form before participating in the study. Blood samples were collected from both groups: one in EDTA for ED and BV measurements, and another in citrate for F8 level assessment. All HA patients included in this study had FVIII levels below 5%, while healthy individuals had FVIII levels within the normal range. BV was measured using a Wells-Brookfield cone-plate viscometer at 230 s⁻¹ and 37°C. ED was determined by filtration through nucleopore membranes using an automated device, following the technique described by Reid et al. The results were expressed as a filtration index (FI), which estimates erythrocyte stiffness (inversely proportional to ED). Data were analyzed using a one-way ANOVA test with MedCalc Software, considering $p < 0.05$ (*) as statistically significant. Results are reported as mean \pm standard deviation. HA patients (n=8): FI=8.65 \pm 1.5 (*), BV=4.41 cP \pm 0.69. Control group (n=18): FI=10.67 \pm 1.96 (*), BV=4.52 cP \pm 0.51. The results indicate a significant difference in ED but not in BV. While BV primarily depends on the erythrocytes' ability to deform, it is a more global property also influenced by plasma protein concentration and other factors such as erythrocyte aggregation. Although there is no direct and systematic evidence of significant differences in erythrocyte metabolism and membrane elasticity between HA patients and healthy subjects, secondary factors such as oxidative stress and the inflammatory environment may indirectly influence these characteristics.

A11

DISINFECTION OF RHIZOME DISCS FOR IN VITRO CULTIVATION OF *Curcuma longa* L. (Zingiberaceae)

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Curcuma longa is a species of great importance in cosmetics, food (as a preservative and condiment), ornamental, and medicinal applications (antidiabetic, antiparasitic, anti-inflammatory, among others). It has significant market potential and economic impact, with growing global demand and limited supply. *C. longa* is a triploid species ($2n=3X=63$), naturally sterile. This characteristic represents a difficulty in its propagation. However, it is possible to propagate this species vegetatively using an *in vitro* plant tissue culture techniques. This technique allows an efficient multiplication of germplasm and controlled plant health. The objective of the present investigation is to validate an efficient protocol for disinfecting rhizome discs of *C. longa*. Rhizomes from *C. longa* were obtained in the province of Salta. The first step of this technique consists of the disinfection of explants. Rhizomes were immersed for 24 hours in a 50% diluted hydrogen peroxide solution. Rhizome discs were used as explants, and these were obtained by cutting slices approximately 0.2 cm thick, which were then placed in 3% sodium hypochlorite with added Tween 20 for 15 minutes. Then, the outer layer was removed until a size of 2.5 cm in diameter was achieved. The discs were immersed in 3% sodium hypochlorite for 10 minutes, and external tissue was trimmed to an approximate size of 1.5 cm in diameter. Finally, the discs were immersed in 3% sodium hypochlorite for 5 minutes and washed with abundant sterile distilled water until all traces of hypochlorite were removed. The explants were cultivated in jars with agar-water medium, which was prepared with distilled water, 30 g·L⁻¹ of sucrose, and adjusted to a pH of 5.8, solidified with 8 g·L⁻¹ of agar, and incubated at (26 \pm 2)°C. Twenty discs were planted, one disc per jar, in a laminar flow chamber. Treatments were: incubation in the presence of light (T1) and incubation in darkness (T2). A sample size of 10 discs per treatment was defined, distributed individually in glass jars containing the culture medium. The disinfection treatment's response indicator was evaluated based on the contamination percentage. The contamination percentage was 0%. A considerable difference in coloration was observed between the discs from both treatments: the discs in T2 initially presented uniform coloration, while those in T1 exhibited a notable loss of color, appearing pale. These preliminary results represent a first step and provided valuable information to continue advancing in the optimization of an *in vitro* culture medium for the micropropagation and healthy plants of *C. longa*.

SOCIAL ISOLATION MODIFIES COCAINE RESPONSE DEPENDING ON THE RAT'S SEX AND AGE

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Cocaine use disorder (CUD) is a chronic brain condition characterized by the loss of control over consumption, which differs from social or sporadic use. Several studies suggest that CUD often occurs in vulnerable individuals who engage in social use of cocaine or other similar substances. This vulnerability to cocaine's effects is related to the individual's history and might be influenced by environmental factors and biological conditions such as age and sex. Over the last decade, our research group has been studying the interaction between environmental and biological factors with cocaine's effects. Previous studies from our laboratory indicated that a brief period of social isolation (SI) from postnatal day (PND) 30 to 35 increased both the response to cocaine and anxiety levels in male rats by PND 60. Given that SI was conducted during an age of high sociability in rats (between PND 28 and 37), we wondered if this brief isolation would have similar effects in adulthood and whether these effects would vary depending on the sex of the rats. Then, our main goal was to evaluate whether age and sex could modify the impact of brief SI on the behavioral responses to cocaine. Female and male rats were housed individually for 5 days between PND 30-35 or PND 90-95 (isolated groups) or remained in their home cages allocated with 3 or 4 rats (control or non-isolated group). Eight to ten days after the isolation period ends, they received an injection of either saline (1 ml/kg i.p.) or cocaine (5 mg/kg i.p. at PND 44 or 10 mg/kg i.p. at PND 103) to evaluate locomotor responses during the hour following the injection. The results showed that, when SI occurred between PND 30-35, male rats exhibited increased anxiety levels ($p < 0.05$) and a heightened response to cocaine compared to control rats ($p < 0.05$). In contrast, isolated female rats demonstrated anxiety levels and cocaine responses like to control rats. Additionally, females exhibited a significantly different response to cocaine versus saline, regardless of isolation exposure ($p < 0.01$). Instead, when animals are social isolated between PND 90-95, anxiety levels were comparable across all groups, regardless of the sex of the rats, and it did not modify the response to cocaine. Moreover, similar to adolescents, adult females showed a significantly greater response to cocaine compared to saline ($p < 0.02$). In summary, it is noteworthy that social isolation impacts the response to cocaine when applied between PND 30-35, affecting only male rats, while females consistently show higher responses to cocaine than males. This response in females is not influenced by prior exposure to isolation and is present at both ages tested.

A13

ROLE OF TCBD7 IN THE EPIGENETIC MODULATION OF DRUG RESISTANCE AND ENVIRONMENTAL STRESS RESPONSES IN *TRYPANOSOMA CRUZI*

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Chagas disease (CD), caused by the parasitic protozoan *Trypanosoma cruzi* (*T. cruzi*), remains a significant public health challenge. In trypanosomatids, the regulation of nucleosome density through histone loading or removal is primarily mediated by histone chaperone proteins, such as TcBDF7 homologous proteins. These proteins have been associated with stress resistance mechanisms. Based on previous evidence, two potential mechanisms can be postulated: (1) TcBDF7 may regulate chromatin compaction levels, thereby influencing its exposure to damage, or (2) it may participate in DNA damage repair mechanisms. In this context, we hypothesize that TcBDF7 is capable of recognizing, binding, and relocating histones (or their variants) to DNA, epigenetically regulating gene transcription and/or modifying stress sensitivity. **Objective:** Evaluate the TcBDF7 role in chemical stress tolerance and drug resistance. **Methodology:** The BDF7 gene was deleted in *T. cruzi* epimastigotes (Dm28c strain) using CRISPR-Cas9 technology. Heterozygous (TcBDF7^{+/−}) and homozygous (TcBDF7^{−/−}) knockout clones were generated and confirmed by PCR. To assess stress resistance, epimastigotes from different clones (initial concentration: 5x10⁶ parasites/ml, in quadruplicate) were treated with increasing concentrations of H₂O₂ (0-250 μM), Cisplatin (0-15 μM), Doxorubicin (0-20 μM), Benznidazole (BZL: 0-40 μM), or Nifurtimox (NFX: 0-10 μM) and incubated at 28°C for 72 hours. Parasites were then fixed, their concentration determined using a hematological counter, and the IC50 calculated. Results: No correlation was observed between resistance to oxidative or chemical stress induced by anticancer drugs (Cisplatin, or Doxorubicin) or H₂O₂ and TcBDF7 expression levels. However, reduced TcBDF7 expression significantly altered *T. cruzi* susceptibility to the trypanocidal drugs NFX (IC50 Dm28c: 2.86; TcBDF7^{+/−}: 3.23; TcBDF7^{−/−}: 0.58) and BZL (IC50 Dm28c: 6.86; TcBDF7^{+/−}: 8.17; TcBDF7^{−/−}: 12.56). **Discussion:** Treatment of eukaryotic cells with cisplatin or doxorubicin can induce single- and/or double-strand DNA breaks. Reactive oxygen species, such as H₂O₂, promote various types of DNA damage, including single- and double-strand breaks, apurinic/apyrimidinic sites, DNA-protein crosslinks, and base modifications. During *T. cruzi* treatment with the prodrugs BZL and NFX, reactive metabolites are generated, causing damage through oxidative stress and/or double-strand DNA lesions. The results suggest that TcBDF7 is not directly involved in regulating chemical stress resistance or DNA repair mechanisms. However, the observed changes in susceptibility to trypanocidal drugs indicate that TcBDF7 may play a role in regulating genes

associated with drug metabolism and/or detoxification, influencing *T. cruzi* resistance to the only currently available drugs for CD treatment. **Conclusion:** These findings highlight the potential role of TcBDF7 in modulating drug resistance mechanisms in *T. cruzi*, providing new insights into the epigenetic regulation of stress responses and drug efficacy in parasitic infections.

A14

HEMATOLOGICAL AND BIOCHEMICAL ALTERATIONS IN DOMESTIC CATS SEROPOSITIVE TO *Leptospira* spp.

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Leptospirosis is a zoonotic infectious disease caused by *Leptospira* spp. Cats are susceptible to infection, especially those with outdoor access due to their exploratory behavior and exposure to contaminated water and soil, as well as potential contact with infected animals. This increases their relevance as reservoirs in both urban and rural environments. This study aimed to detect hematological and biochemical alterations in cats seropositive to *Leptospira* spp. Blood test data were collected from four adult European domestic cats with a confirmed leptospirosis diagnosis through the microscopic agglutination test (MAT), recorded at the Leptospirosis Service of the Faculty of Veterinary Sciences, National University of Rosario (FCV UNR). The biochemical and hematological parameters of infected cats were compared with the reference values for healthy cats established in the protocols of the Centralized Laboratory Service of the Large and Small Animal Teaching Hospital. The cases were characterized by hematological parameters such as anemia, leukocytosis, thrombocytopenia, neutrophilia with left shift, lymphopenia, eosinopenia, and high urea and creatinine levels. Regarding liver enzymes (alanine aminotransferase - GPT or ALT; aspartate aminotransferase - GOT or AST; alkaline phosphatase - FAS or ALP), variable results were observed. Cats seropositive to *Leptospira* spp. presented hematological alterations characterized by anemia, thrombocytopenia, and leukocytosis with the presence of immature neutrophils, suggesting a generalized inflammatory response to bacterial infection. Biochemical parameters, particularly liver enzyme levels, indicated that hepatic damage may vary among individuals. In contrast, increased urea and creatinine levels were consistently observed in all leptospirosis cases, indicating impaired renal function. The results align with findings reported in international literature and highlight the importance of conducting comprehensive analyses on sick cats.

A15

APPLICATION OF PEIRCE'S ABDUCTIVE THEORY IN THE TEACHING OF PLANT DISEASE DIAGNOSIS

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The subject of Plant Pathology is taught in the second part of fourth year of the Agricultural Engineering degree at the College of Agricultural Sciences UNR (National University of Rosario). The objective of this work is related to the last unit of the program (diseases of wheat, corn, soybeans, sunflowers and sorghum), since a problem that arises in the curricular space is related to the fact that students tell their teachers that they are not able to make a correct diagnosis of diseases in the field. In this work, it was proposed to discuss the bases of medical-clinical reasoning (abductive theory proposed by Peirce in the 20th century) as a strategy for addressing new knowledge, in order to design a pedagogical teaching proposal for the subject Plant Pathology, in two academic years (2021 and 2022). The proposed learning model considered four stages: the teacher's previous experience in the field of Plant Pathology, the observation of the difficulty in learning a topic within the course program, the application of the medical-abductive theory to the diagnosis of diseases, and the testing of the usefulness of this theory in a classroom intervention. A class was designed providing students with information regarding the wheat cultivar to be evaluated, including information on the previous crop, soil preparation, sowing date, resistance behavior against diseases, chemical applications carried out up to the time of evaluation, meteorological conditions that developed since sowing, main diseases that affect the crop and phytosanitary alert reports. Subsequently, the severity scales necessary for the quantification of the diseases observed in the field were shown and concluded with intensive training through the use of a freely accessible platform:

<https://severity.cropprotectionnetwork.org/>. In order to detect indicators of the usefulness of the application of the abductive method, a validated questionnaire was used to evaluate design thinking, a concept that implies the use of new tools to find practical solutions during the innovation process. The students were asked to complete the same questionnaire before and after attending the intervened class, in order to record whether their attitudes had changed once they went through the proposed modification. On the other hand, the score obtained by the students in the question related to the diagnosis of diseases in the field in the partial evaluation of the subject was recorded, in order to investigate whether the proposed educational intervention was a useful strategy to incorporate knowledge. After the educational intervention, the students applied inductive and abductive reasoning in almost the same proportion. It is proposed to continue using this work methodology in the subject and assess its application in a larger number of students in the course.

A16

STUDY OF THE THERAPEUTIC EFFICACY OF A NEW ALBENDAZOLE-BETA-CYCLODEXTRIN COMPLEX IN ASSOCIATION WITH LEVAMISOLE IN CBI/L MICE RESISTANT TO *Trichinella spiralis* (Ts) INFECTION

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Trichinellosis is a parasitic zoonosis caused by nematodes of the genus *Trichinella*. The infection is difficult to treat on account of the parasite's complex life cycle and limited efficacy of available treatments. Benzimidazole derivatives such as albendazole (ABZ) are widely used due to their broad spectrum and low cost, despite their poor solubility, which reduces its bioavailability and therapeutic efficacy. Efficacy may be improved by co-administration with another drug targeting a different site of action, broadening its spectrum of activity. Such is the case of levamisole (Lev), a soluble immunomodulatory anthelmintic usually combined with benzimidazoles to treat parasitic infections. This study aimed to evaluate the therapeutic efficacy of co-administrating a novel ABZ- β -cyclodextrin citrate inclusion complex (Comp) and Lev in CBI/L mice resistant to *Ts* during the chronic stage of infection. For that purpose, adult CBI/L mice of both sexes were orally infected with two *Ts* L1 larvae per gram of body weight (BW). Animals were randomly assigned to five groups (n = 6 per sex and treatment): control (C) or treated with a daily dose of ABZ, Comp, ABZ+Lev, or Comp+Lev (ABZ, 30 mg/kg BW; Lev, 0.32 mg/kg BW) on days 27, 28, and 29 post infection. Antiparasitic efficacy was assessed seven days post treatment by estimating muscle worm burden (MWB, number of L1 larvae/g muscle weight) and number of dead larvae recovered (NDL). Mice treated with ABZ+Lev, Comp, or Comp+Lev showed a significant decrease in MWB (P = 0.0001 ♂; P = 0.0141 ♀) compared to controls and those treated with pure ABZ. A higher NDL was observed in Comp (♂) and Comp+Lev (♂ and ♀), but this would not fully explain the increased anthelmintic efficacy of ABZ co-administered with Lev or as Comp. Therefore Comp, as well as ABZ+Lev and Comp+Lev combinations, improved ABZ therapeutic efficacy and could be effective for treating chronic *Ts* infection in the CBI-IGE murine trichinellosis model.

A17

TEGUMENT COLOUR AND SOLUBLE CARBOHYDRATES ASSOCIATED WITH THE LONGEVITY OF SOYBEAN SEEDS

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The loss of seed viability is an irreversible and inevitable process. In cultivated soybean varieties (*Glycine max* L. Merr.), metabolic and genetic alterations become critical from six to eight months after harvesting, severely limiting the storage time of these seeds. On the other hand, ancestral soybean varieties (*Glycine soja*) have hard, dark seed coats, which confer greater natural longevity to these seeds. In this sense, the seed coat plays a crucial role as a modulator between the internal seed structures and its surrounding environment. Then, while the hard coat characteristic restricts seed imbibition, resulting in an uneven seedling establishment, no solid reports support the selection against the seed coat colour characteristic. However, both characteristics were practically removed in cultivated varieties by domestication and selection processes. Additionally, raffinose family oligosaccharides (RFOs) constitute a fraction of the soluble carbohydrates of seeds and play an essential role in stress tolerance and membrane stability during seed desiccation. This work evaluated seed longevity concerning seed coat colour and RFOs concentration. Two cultivated varieties were used with no hard and contrasting seed coat colour: Williams 82 (W82), of yellow coat; and N816, of black coat. Seeds of W82 and N816 were grown in the field and harvested in 2019, 2021 and 2024; and 2020, 2022 and 2024, respectively. After harvesting, the seeds were stored in vacuum containers at 4°C and 60% humidity. In the current year (2024), the germination power (GP; %) and the RFOs concentration (% W/W) were determined for each variety at its respective production year. The results were analyzed statistically using the Rstudio software. The var. W82 had a GP of 88% (2019); 75% (2021) and 100% (2024); while the values for N816 were: 90% (2020); 100% (2022) and 100% (2024). Also, for the respective campaigns, the RFOs concentration (%)

was 4.24; 4.28 and 3.91 for W82 and 4.59; 4.60 and 4.38 for N816. The PG results showed significant differences between the W82 and N816 during storage time, showing higher and more stable values for N816 throughout the successive campaigns. Moreover, the RFOs concentration was also significantly higher for N816 than W82 throughout the storage time. We conclude that, at least for the varieties used in this work, the black colour of the seed coat could be associated with a higher RFOs concentration, which provides greater stability and viability to soybean seeds, thus conferring a longer longevity time. These results could be useful to optimize the production and marketing strategies of these seeds, suggesting further studies and support, as well as new studies to analyze the possible contribution of the hard seed coat characteristic to the increased longevity of soybean seeds.

A18

CARDIOVASCULAR RISK IN DIABETIC OLDER ADULTS ACCORDING TO THE GLYCEMIC CONTROL ACHIEVED

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Cardiovascular diseases (CVD) are the main cause of morbidity and mortality in diabetic patients, being dyslipidemia one of the main risk factors. These patients present a pattern of lipid alterations characterized by elevated low-density lipoprotein cholesterol (LDL-c), with increase in small dense LDL particles and in triglycerides (TG) and reduction in high-density lipoprotein cholesterol (HDL-c), which basically constitute an atherogenic dyslipidemia. The cardiovascular risk (CVR) in diabetic patients without a history of ischemic heart disease is similar to that of non-diabetic subjects with a history of heart attack. According to guidelines for the management of dyslipidemia, the main therapeutic objective in diabetic patients is the reduction of LDL-c. However, it has been seen that the evaluation of CVR based only on LDL-c values is not optimal. In an attempt to improve the prediction of CVD, several lipoprotein indexes and ratios have been defined that reflect the clinical and metabolic interactions of lipid fractions and, therefore, are better predictors of CVD than simple lipid parameters. In a previous study with older diabetic adults (ODA) in Rosario city, we found defective glycemic control (HbA1c>7.5%) in 43% of treated patients. The objective of the present work was to compare the CVR -estimated through different atherogenic risk indexes- in ODA according to the glycemic control achieved by them. A non-interventional, descriptive study was conducted, collecting conveniently anonymized information from the history of 380 patients from the PAMI I Polyclinic laboratory. The following indexes were calculated: non HDL-c (Total c-HDL-c); Castelli I (Total c/HDL-c); Castelli II (LDL-c/ HDL-c) and the index (TG/ HDL-c). Results are shown as the percentage of ODA that reached (R) or did not reach (NR) the target value (tv) of the respective indexes according to their glycemic control: adequate (A) or defective (D). The Fisher test was used for statistical analysis, $p < 0.05$ was considered significative. Non HDL-c (tv <130 mg/dl) R: A: 57 - D: 43 vs NR: A: 50 - D: 50 ($p: 0.127$); Castelli index I (tv <3.5) R: A: 54 - D: 46 vs NR: A: 56 - D: 44 ($p=0.403$); Castelli index II (tv <2.5) R: A: 56 - D: 44 vs NR: A: 53 - D: 47 ($p=0.345$); Atherogenic index (tv <3.0) R: A: 54 - D: 46 vs NR: A: 56 - D: 44 ($p=0.362$). Related to ODA's CVR, therapeutic objectives were poorly achieved, more than 50% of those with adequate glycemic control failed to reduce cardiovascular risk assessed by atherogenic indexes.

A19

IMPACT OF SPERMA RECOVERY ON THE RESULTS OF INTRAUTERINE INSEMINATIONS ACCORDING TO MATERNAL REPRODUCTIVE AGE

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Intrauterine insemination (IUI) is a low-complexity assisted reproduction technique (ART) that consists of depositing a suspension of selected viable sperm inside the mother's uterus during the ovulatory period. The age of the woman is a factor with a high incidence on reproductive efficiency and gestational achievements. In IUI, a minimum total of selected progressively motile sperm of more than 5 million is required to increase the chances of successful pregnancy rates. The objective of the work was to analyze the impact of the recovery of viable sperm on the results of IUI according to the reproductive age of the woman. A retrospective observational case study was carried out where 152 homologous IUI procedures performed at the URHMA (april 2015 to june 2024) were analyzed in couples with women between 22 and 41 years of age. All semen samples used met the inclusion criteria to perform a low complexity procedure. The selection of better quality sperm was carried out with the Density Gradients Centrifugation technique. Four groups were formed according to the ages of the women: G1 (n=29) women between 22 and 29 years old; G2 (n=65) between 30 and 35 years old; G3 (n=44) with 36 to 39 years old and G4 (n=14) made up of women between 40 and 41 years old. For statistical analysis, the Chi square test was applied. All pregnancies (positive betas) were obtained from a total

of selected MP spermatozoa greater than 25 million regardless of the woman's age. In the younger maternal age groups (G1 and G2) there was a higher rate of pregnancies (10% and 14% respectively) and live births, while in the older age groups (G3 and G4) there was only one live birth and a higher rate. of abortions. In IUI, the selection of functionally competent sperm did not have a significant impact when defining the pregnancy rate, while advanced maternal age was associated with a lower pregnancy rate and a higher abortion rate in couples who achieved pregnancy. In low-complexity ART, maternal age is a relevant prognostic factor to achieve greater chances of success in the rate of evolutionary pregnancy and live births.

A20

TRIGONELLINE, QUERCETIN, AND β -SITOSTEROL: COMPARATIVE *IN VITRO* STUDY OF THE HEMORRHEOLOGIC ACTIVITY ON GLYCATED ERYTHROCYTES

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Due to hyperglycemia in diabetes (DBT), the glycation effect modify the erythrocytes, producing alterations in hemorrheological parameters. Consequently, the evaluation of the hemorrheological activity of phytochemicals present in native plants popularly used for the treatment of DBT, such as *Bauhinia forficata* (Pezuña de Vaca) and *Phyllanthus sellowianus* (Sarandí Blanco), is of current interest. In this work, solutions of commercial phytochemicals were prepared: trigonelline (T) 1 mg/mL, quercetin (Q) 100 μ M, and β -sitosterol (BS) 40 μ M. Red blood cells (RBC) obtained by venipuncture from 10 healthy donors were used. The RBCs were washed and incubated at 37°C for 2 hours with 0.4 g/dL glucose solution to obtain *in vitro* glycated erythrocytes (gRBC). This glucose concentration corresponds to a blood glucose value of 240 mg/dL in a diabetic patient (measured with the Accu-Chek device). Then, the gRBCs were incubated with each phytochemical solution under controlled conditions. For the erythrocyte aggregation study, the samples were suspended in 0.3% autologous plasma, and digital microscopic images were recorded, from which the isolated cell coefficient (CCA) was calculated. The viscoelastic parameters were obtained fivefold with an Erythrocyte Rheometer: deformability index (DI), elastic modulus (μ), and surface viscosity of the erythrocyte membrane (\downarrow). In the gRBCs, the μ and η decrease, and CCA increases significantly compared to the RBC control. When treating the gRBC with the T solutions, an increase in μ is observed, approaching the value of the RBC control. Also, the gRBC treatment increases η significantly, bringing it closer to the value of the controls for the three phytochemicals evaluated. The CCA decrease would indicate a possible anti-aggregation activity, especially for BS. These results suggest the interaction of phytochemicals with the glycocalyx and lipid bilayer of the erythrocyte, reversing the glycation effects.

A21

BIOFILM PRODUCTION AND ANTIFUNGAL SUSCEPTIBILITY OF REGIONAL *Cryptococcus* spp. STRAINS

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The genus *Cryptococcus* encompasses encapsulated yeasts capable of causing disease in both immunocompromised and immunocompetent individuals. Cryptococcosis is primarily associated with two species complexes: the *Cryptococcus neoformans* complex and the *Cryptococcus gattii* complex. These species exhibit the ability to form biofilms – microbial communities that adhere to surfaces and are encased within an extracellular matrix – particularly *in vitro* and on medical devices or other surfaces. Biofilm formation by these yeasts may contribute to their persistence and resistance within hostile environments, such as the respiratory tract and other human tissues, and may be linked to their virulence and reduced treatment efficacy. Currently, no international guidelines establish antifungal susceptibility breakpoints for *Cryptococcus*, as are available for *Candida*. Consequently, the Epidemiological Cut-Off Value (ECOFF) is employed to classify the microorganism based on the presence or absence of acquired resistance mechanisms. This preliminary study aimed to evaluate biofilm production and antifungal susceptibility in regional strains preserved within the CEREMIC culture collection (CCC). Eleven strains were analyzed, comprising nine *C. neoformans sensu lato* and two *C. gattii sensu lato*. Biofilm formation on plastic was assessed utilizing 96-well microplates. Quantification was performed through the crystal violet method, classifying strains as strong, moderate, weak, or non-biofilm producers. Antifungal susceptibility was evaluated by microdilution according to EUCAST guidelines, testing amphotericin B, fluconazole, itraconazole, posaconazole, voriconazole, and 5-fluorocytosine. Of the 11 strains analyzed, three were classified as moderate biofilm producers, while eight were classified as weak producers. In susceptibility testing, *C. neoformans sensu lato* strains demonstrated high susceptibility to azoles, with the exception of fluconazole, which exhibited dose-dependent susceptibility. Strains exhibited susceptibility to 5-fluorocytosine while displaying reduced susceptibility to amphotericin B. *C. gattii sensu lato* strains demonstrated high susceptibility to posaconazole and 5-

fluorocytosine. No relationship was observed between *Cryptococcus* species and biofilm-forming ability, nor between moderate biofilm production and decreased antifungal susceptibility. Further investigations involving a larger number of strains are necessary to establish definitive relationships between these yeast virulence factors and antifungal susceptibility. Understanding these characteristics in regional strains isolated and preserved at our center will facilitate the prediction of their behavior. This knowledge is crucial for initiating prompt, effective, and precise treatment, thereby reducing delays and optimizing resource utilization within our hospital setting.

A22

COMPARISON OF PHYSICAL ACTIVITY LEVELS BETWEEN FACULTY MEMBERS AND NON FACULTY STAFF AT THE FACULTY OF MEDICAL SCIENCES, UNR

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The World Health Organization proposes physical activity as a fundamental measure in the fight against non-communicable diseases. Regular physical activity, appropriately adjusted to individual capacities and characteristics, promotes positive effects on overall health and the body's physiological functions. It is important to understand the pattern of physical activity habits in the adult population and determine to what extent certain lifestyle factors and types of work influence the practice of physical activity. Based on this, we set out to compare the level of physical activity between Faculty Members (FM) and Non-Faculty Staff (NFS) of the Faculty of Medical Sciences at UNR. After signing informed consent forms, 153 Faculty Members and 130 Non-Faculty Staff from the Faculty of Medical Sciences at UNR completed the internationally validated short-form IPAQ questionnaire, which evaluates physical activity levels and classifies them as low (L), moderate (M), or high (H). The results were: Physical Activity Level (PAL): L: 35.5% (95% CI 30.7–40.6%), M: 25.6% (20.9–30.7%), and H: 38.9% (33.1–44.0%). There were no differences between genders ($p=0.387$). When comparing by role: FM: L: 25.5% (19.6–32.1%), M: 28.1% (20.3–36.0%), H: 46.4% (37.9–54.9%); NFS: L: 46.4% (37.9–53.9%), M: 22.9% (16.8–30.0%), H: 30.7% (24.0–38.2%) ($p=0.001$). The average sitting time was FM: 5.83 ± 2.23 hours and NFS: 6.48 ± 2.56 hours ($p=0.024$). The prevalence of sedentary behavior among NFS was similar to that reported in the 2018 National Risk Factor Survey, which, at the national level, was 44.2% (43.1–45.2%). However, the prevalence among FM was significantly different ($p<0.05$). Faculty Members were more active than Non-Faculty Staff, which could be influenced by differing perceptions of health (most faculty members are physicians), whereas Non-Faculty Staff may have access to different types of information and resources. These findings highlight the importance of tailoring public health interventions to account for differences based on occupational roles.

A23

EFFECT OF AGE AND SEX ON AORTOSEPTAL ANGLE IN CLINICALLY HEALTHY DOGS (*Canis lupus familiaris*)

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Subaortic stenosis (SAS) is one of the most common congenital defects in dogs. It is defined as a narrowing of the left ventricular outflow tract (a structure bounded primarily by the interventricular septum and the anterior mitral leaflet), resulting in a partial obstruction of blood flowing through this vessel. Echocardiography is the selected complementary method for diagnosis. One of the indirect echocardiographic signs of SAS is an anomalous aortic root implantation (aortoseptal angle). Angles less than 145° indicate a high probability of developing SAS. The aim of this study was to evaluate the effect of age and sex on the aortoseptal angle in clinically healthy dogs. A total of 194 clinically healthy dogs located in the area of influence of the School of Veterinary Sciences of the National University of Rosario were used. These dogs were divided into six groups: Female puppies: $n=16$, Male puppies: $n=16$, Female adults: $n=52$, Male adults: $n=49$, Female seniors: $n=30$ and Male seniors: $n=31$. The assessment of the aortoseptal angle [Degrees ($^\circ$)] was performed by echocardiography. The estimation of this parameter was performed by drawing a line, parallel to the interventricular septum, and another one, parallel to the major axis of the ascending aorta at its exit from the heart, thus obtaining the value from the union of both directrices. The effect of age and sex on the aortoseptal angle was assessed using a Kruskal-Wallis test, followed by a Dunn's test for multiple comparisons. The following aortoseptal angle values [median (interquartile range)] were obtained: Female puppies: 162.3 (151.8 – 172.8); Male puppies: 160.7 (148.5 – 172.9); Female adults: 159.9 (147.1 – 172.9); Male adults 158.6 (148.3 – 168.9); Female seniors: 157.6 (142.4 – 172.8); Male seniors: 160.4 (153.0 – 167.8), with no significant differences among groups ($H= 4.05$; $p= 0.5423$). Although

literature on this subject in clinically healthy animals is scarce, it was possible to confirm that the values for the different ages (puppy, adult and senior) and sex (males and females) coincide with those published, though without the discrimination by sex. The aortoseptal angle reported in Golden Retriever puppies is 155.7 (146.9 – 164.5), while for adult Golden Retrievers it is 152.3 (145.8 – 158.8). For Boxer dogs, the reported angle is 152.8 (140.0 – 162.0). Despite being considered a preliminary study, the information in this paper suggests that the aortoseptal angle would not be influenced by age or sex in this group of clinically healthy animals. Future studies which focus on the influence of other variables (breed, size, reproductive status, among others) on the aortoseptal angle in this species are proposed in order to gather information that will contribute to the study of SAS.

A24

EFFECT OF THE INCORPORATION OF PROBIOTICS IN RABBITS FOR MEAT PRODUCTION

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The use of probiotics has been considered an alternative to antibiotics as growth promoters in animal nutrition. These live microorganisms benefit the host's intestinal tract without altering its normal biological functions. Among the authorized probiotics, yeasts of the genus *Saccharomyces cerevisiae* are included. The objective of this study was to analyze the effect of probiotic supplementation in the diet of grower rabbits (*Oryctolagus cuniculus*) during the grow-out period, using daily weight gain as the evaluation variable. The experiment was conducted at the Rabbit Production Module of the Faculty of Veterinary Sciences, UNR, in a 17 m x 7 m barn with natural ventilation, side curtains, a metal sheet roof, and a concrete floor. The facility was equipped with 36 multipurpose grow-out cages (0.45 m x 0.90 m x 0.30 m), automatic nipple drinkers, and metal hopper feeders. A total of 120 crossbred rabbits (New Zealand, Californian, and Burgundy Fawn crosses) were used, with an initial average weight of 0.645 ± 0.18 kg, originating from three consecutive weaning batches. Each grow-out batch was randomly divided into two groups, with two to six animals per cage. One group received Procreatim 7® in drinking water at a dose of 1 g per liter daily (probiotic-treated group, PTG), while the other served as the control group (CG) without probiotics. The rabbits were fed ad libitum with commercial pelleted feed (3 mm diameter), containing 16% gross protein, 15% crude fiber, 3% crude fat, and 2900 kcal/kg. The trial lasted 49 days for each of the three consecutive batches, with individual weekly weighings. The results showed an average daily weight gain of 0.041 kg for PTG and 0.042 kg for CG. The independent-sample t-test revealed no significant differences between the groups ($p > 0.05$). The lack of response to probiotic supplementation in this trial highlights the need for further research on different probiotic inclusion methods, such as direct incorporation into feed. Additionally, exploring different administration doses may create physiological conditions more conducive to the expression of the attributed probiotic properties.

A25

EVALUATION OF THE ANTIFUNGAL SUSCEPTIBILITY OF HALOHYPHOMYCETES INVOLVED IN HUMAN DISEASE

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The genera *Aspergillus* and *Fusarium* that belong to the hyalohyphomycetes group can induce allergic reactions and opportunistic infections in immunocompromised individuals; some species also produce toxins. Given the variability in the susceptibility of these strains to antifungal agents, it is crucial to deepen our understanding of their antifungal behavior. A common challenge lies in interpreting susceptibility values obtained, as clinical breakpoints are currently unavailable. Nonetheless, consensus guidelines have been established to define epidemiological cutoff points, allowing fungi to be classified based on the presence of acquired resistance mechanisms. The objective of this study was to analyze the susceptibility profiles of *Aspergillus* and *Fusarium* strains preserved in the CEREMIC culture collection (CCC). We studied 23 isolates of *Aspergillus* (7 *A. fumigatus*, 5 *A. flavus*, 3 *A. niger*, 2 *A. terreus*, 2 *A. ustus*, 1 *A. nidulans*, 2 *A. oryzae*, and 1 *A. ochraceus*) and 10 strains of *Fusarium* (3 *F. oxysporum* and 7 *F. solani*). The antifungal agents (AF) tested were amphotericin B (AMB), itraconazole (ITZ), voriconazole (VCZ), posaconazole (PSZ); in *A. fumigatus*, caspofungin (CSF) was also tested. Among *A. fumigatus* isolates, resistance was observed in 14% to AMB, voriconazole (VCZ), and posaconazole (PSZ), and in 100% to itraconazole (ITZ); all isolates were susceptible to caspofungin (CSF). For *A. flavus*, 40% were resistant to AMB, 80% to ITZ, and 20% to VCZ, while all were susceptible to PSZ. *A. niger* isolates were susceptible to AMB but resistant to ITZ, with 33% showing resistance to VCZ and PSZ. *A. terreus* demonstrated 100% susceptibility to AMB, 100% resistance to VCZ, and 50% susceptibility to ITZ and PSZ.

In *A. ustus*, 100% resistance to ITZ and 50% resistance to the other antifungals were recorded. *A. nidulans* showed complete resistance to ITZ and full susceptibility to the remaining antifungals. *A. oryzae* was susceptible to all antifungals tested. *A. ochraceus* exhibited 100% resistance to AMB, ITZ, and PSZ, but was susceptible to VCZ. For *Fusarium* isolates, *F. oxysporum* was fully susceptible to AMB, completely resistant to ITZ and PSZ, and 67% resistant to VCZ. *F. solani* was susceptible to AMB, with 71% resistance to ITZ and 29% resistance to VCZ and PSZ. Based on results obtained from the analyzed regional strains, it can be concluded that susceptibility profiles within the genus *Aspergillus* vary by species, highlighting the importance of accurate species identification. Furthermore, ITZ was the least effective antifungal for this genus, while AMB, VCZ, and PSZ emerged as the most recommended treatment options. For the genus *Fusarium*, the antifungals tested showed generally lower effectiveness than in *Aspergillus*. ITZ demonstrated very low efficacy, AMB was highly effective, and the other azoles displayed variable activity.

A26

IMPACT OF DROUGHT ON THE PRODUCTION OF *Festuca arundinacea*: APPLICATION OF THE AQUACROP MODEL AND PROJECTIONS TO 2039

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This study examines the impact of drought and climate change on the productivity of *Festuca arundinacea*, a critical forage species in Argentina's Pampas region. Utilizing AquaCrop—a model developed by FAO to simulate crop responses to water availability—projections were analysed for the 2026–2039 period under a moderate climate change scenario. The model was calibrated using data from a particularly dry year (2023) and applied to simulate outcomes under both irrigated and non-irrigated conditions. Future scenarios forecasted increases of +3.68 °C in minimum temperatures, +1.95 °C in maximum temperatures, and a 10% rise in precipitation. The results indicated an average 38% reduction in forage biomass due to higher temperatures, even with irrigation. However, supplementary irrigation (229 mm) improved both growth and water use efficiency, partially mitigating the effects of water stress. The model demonstrated strong predictive accuracy, with a root mean square error of 315 kg DM/ha and an efficiency of 0.80. Ultimately, the study underscores strategic irrigation as a pivotal practice to sustain the productivity of *Festuca arundinacea* amidst future climate challenges in the region.

A27

INTERINSTITUTIONALITY AS A STRATEGY FOR PROMOTING ORAL HEALTH IN ADOLESCENTS.

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Interinstitutionality is an effective strategy for promoting oral health in adolescents, as it allows collaboration between schools, university institutions and the community. Through this approach, education and prevention of oral diseases is enhanced, taking advantage of the resources and knowledge of different sectors. The school, in particular, plays a key role in forming healthy habits that impact the quality of life of the different actors. Adolescence is considered a highly vulnerable group, as it goes through many changes in its different vital processes. Objective: To determine the knowledge, practices and care regarding the most prevalent oral diseases in the field of oral health in adolescents. Methodology: Descriptive, observational, cross-sectional study. Study population: 1st year students of a public technical school in the central district of the city of Rosario. With prior authorization, self-administered, voluntary and anonymous semi-structured questionnaires were conducted with multiple choice questions, complying with ethical-legal requirements. Preliminary progress: The population studied consisted of 77 adolescents aged 13 and 14 years old. 11.7% female, 88.3% male, non-binary 0%. Demand for care: 49.3% public system, 37.7% social security and 13% private. No significant association was found between gender and demand for care in adolescents ($p = 0.743$). Currently 18.2% of the total are undergoing dental treatment. 54.5% perceive their health as good ($p=0.333$), this suggests that there is no statistical evidence of a relationship between gender and self-perception. Meanwhile, 75.3% state that it does not affect their personal life. The ailments manifested in the last year were: 31.2% bad breath, pain 14.3%, discomfort in lips and cheeks 3.9%, food between the teeth 26%, while 40.3% none of the options. The way to solve it was, improving hygiene 29.9%, going to the dentist 13%, no answer 50.6%. To solve their oral health problems, adolescents prefer to improve their oral hygiene instead of visiting the dentist ($p=0.0334$). When asked if bleeding gums can be a sign of disease, 41.6% answered true, 40.3% did not know and 18.2% false ($p=0.1478$), meaning that they do not recognize bleeding gums as a sign of disease. Among the causes of caries, 79.2% believe that bacteria cause the disease ($p=0.0001$), as well as eating sweet foods 70.1% ($p=0.0003$). The care of the Health Disease Process is represented by tooth brushing (87%), regular visits to the dentist 88.3%, do not know 6.5%. Adolescents recognize the importance of tooth brushing and tend to correctly associate it with the prevention of caries ($p=0.046$), not finding a significant association with the prevention of periodontal disease ($p=0.386$). 71.4% of the adolescents

surveyed are not aware of the effects of fluoride ($p=0.0001$). Conclusion: The group of adolescents presented greater knowledge about caries care, but not periodontal disease or the mechanism of action of fluoride. Promoting inter-institutional articulation and inter-sectoral coordination is strategic for addressing problems arising from working with the population.

A28

ISOLATION OF *Naganishia diffluens* (FORMERLY *Cryptococcus diffluens*) FROM SKIN LESIONS IN A PATIENT WITH LEUKEMIA.

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Fungal infections caused by species of the genus *Cryptococcus* are an increasing public health concern, with species from the *Cryptococcus neoformans* and *Cryptococcus gattii* complexes being the most common and extensively studied. In recent years, other species from related genera have emerged, including *Naganishia diffluens*, which was originally classified within the genus *Cryptococcus*. Globally, reports on this species remain limited, underscoring the need to emphasize its significance, particularly regarding its potential role in cutaneous lesions in immunosuppressed patients. Here, we present the case of a 27-year-old male patient from Rosario with no significant medical history, who was admitted to the Provincial Centenario Hospital in Rosario. The patient was admitted due to Vincent's angina. Subsequent laboratory studies revealed acute promyelocytic leukemia. The patient underwent chemotherapy and achieved a favorable hematological response. During treatment, the patient developed febrile neutropenia accompanied by cutaneous lesions. A biopsy of these lesions was performed and sent to the Mycology Laboratory at the Center for Mycological Reference (CEREMIC). Direct examination with India ink revealed round, encapsulated yeast-like cells. Cultures produced smooth, moist, cream-colored yeast colonies. Micromorphological analysis on cornmeal agar showed round or globose yeast cells without pseudohyphae. Microscopically, capsules were observed, and the urease test was positive. The VITEK® system identified the isolate as *Cryptococcus albidosimilis* with low confidence (35%). MALDI-TOF MS produced inconclusive results, identifying the isolate as several different fungal species, each with low probability. Definitive and accurate identification was achieved through ribosomal DNA sequencing, which confirmed the species as *Naganishia diffluens*. According to the scientific literature, only three cases of mycosis caused by this fungus have been reported worldwide to date. Antifungal treatment consisted of a combination of liposomal amphotericin B and isavuconazole administered over four weeks, resulting in successful resolution. This case highlights the importance of the accurate identification of this emerging species in immunosuppressed patients, particularly given its potential to cause cutaneous lesions, which are often misdiagnosed as dermatophytosis, enabling the implementation of appropriate and effective treatment.

A29

BACTERICIDAL ACTION OF *Baccharis spicata* VOLATILE OIL ON PATHOGENIC BACTERIA OF ANIMALS

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Antimicrobial resistance of bacteria that cause diseases prompted the search for antimicrobials substitutes. Use of volatile oils (VO) obtained from plants in pathologies treatment has been reported in Veterinary Medicine. VO are complex mixtures of volatile substances, its composition depends on plant intrinsic and extrinsic aspects that affect chemical and biological properties. Focusing on possibilities of using native flora, species of the Genus *Baccharis* known as "carquejas" are used to treat liver disorders in South American countries, and caffeoylquinic acid is the main compound for this action. *Baccharis* spp. VO have activity against *Trypanosoma cruzi* too: alismol, spathulenol and caryophyllene oxide are the most active substances against epimastigotes. Composition of *Baccharis spicata* VO varies depending if they are extracted from female or male specimens, among other variables. The aim of this study was to detect clues of bactericidal action of VO extracted from *Baccharis spicata* (VOB) on pathogenic bacteria isolated from animals. At FCByF-UNR, VOB were obtained by hydrodistillation of female inflorescences of *Baccharis spicata* (Lam.) Baill., collected in Roldán, Province of Santa Fe and deposited in the UNR Herbarium (UNR voucher number # 2034). At FCV-UNR, Bacteriology Service, Gram-positive (G+) and Gram-negative (G-) pathogenic bacteria used in this experiment were isolated: *Staphylococcus pseudintermedius* recovered from canine dermatitis (G+) and *Escherichia coli* producing enterotoxins and verotoxins (ETEC and VTEC) isolated from porcine diarrhea (G-). These bacterial strains were kept frozen at -80°C until the experiment. VOB was transported refrigerated after obtaining it, and then stored at -20°C. Paper discs were impregnated with VOB (its absorbent capacity was previously tested) and dried before being used. Antimicrobial sensitivity tests using Kirby-Bauer technique were

performed: Mueller Hinton agar plates were inoculated with G⁺ and G⁻, and all were incubated during 18 hours at 37°C. Bactericidal capacity was related to the production of inhibition halos around discs (or areas without bacterial growth); this effect only happened in the case of G⁺. Experience was repeated with the same results: only G⁺ were sensible to VOB. G⁺ and G⁻ bacteria have cell walls with different structure and chemical composition. Some antibiotics, such as penicillins, have specific activity on G⁺, interfering with the formation of its thick peptidoglycan. The identification of the specific VOB substances that produced bactericidal effect on G⁺ remains without investigation, but possibilities of topical use for dermatitis are opening, because a low toxicity of VOB in various cell lines has also been described.

A30

KINETICS OF IN SACCO RUMEN DEGRADATION OF *Ludwigia peploides*

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Ludwigia peploides (Kunth) P.H. Raven, a plant species belonging to the *Onagraceae* family. It is a perennial aquatic herb with a marsh habit, with floating, lying stems and ascending branches up to 0.60 m high, obtuse leaves, yellow flowers and a cylindrical capsule-type fruit. It grows abundantly during the spring-summer period in internal lagoons of the Paraná River Delta, occupying large areas and is consumed by cattle that graze on the islands. The few available studies describe that it is a native forage resource that has a good protein level (23 %) and high productivity (92.5 kg/MS/ha/day) during its maximum growth period. The study of this species is interesting in order to provide knowledge about native food resources consumed by ruminant herbivores on the islands of the Upper Paraná River Delta. The objective was to describe the kinetics of *in sacco* rumen degradation of *Ludwigia peploides* during its annual growth cycle. We worked with samples of *Ludwigia peploides* (LP), obtained at regular intervals (31.8 days, SD: 7.2), in the growth period 2019 - 2020 (October to March), on the island of the Mástiles, at the height of km 430 of the navigation channel of the Paraná River. Dry matter (DM%) was determined immediately after collection of the samples, then they were dried in an oven at 60 °C for 48 hours, ground and sieved (2 mm). The kinetics of ruminal dry matter degradation (DRISDM %) was determined for each sample using the *in sacco* technique. ASTM 230 nylon cloth bags (pore size: 62 microns) were incubated with 3 g of DM (17 mg DM/cm²) of each sample for 0, 3, 6, 12, 24 and 48 h, during two periods, in the rumen of two Pampinta sheep fitted with a ruminal cannula and kept in stables with access to water and alfalfa hay. Immediately after being removed from the rumen, they were washed with running water, dried at 60°C for 48 h and weighed to obtain the percentage of dry matter degradation. The DRISDM data were fitted to the Orskov and Mc Donald model (1979): $DRISDM \% = a + b(1 - e^{-c})$, where a is the rapidly degradable fraction, b the slowly degradable fraction, c the degradation rate of b and a + b the potentially degradable fraction. The results were studied by ANOVA and Duncan test ($P > 0.05$). The average dry matter of the LP samples was 22.8 % (SD: 5.3). The data obtained presented a very good fit to the proposed model with an R^2 of 0.98. The results of the *in sacco* ruminal degradation kinetics of the LP samples fitted to the proposed model were 26.9; 33.5; 39.3; 48.8; 61.9 and 74.3 % at 0, 3, 6, 12, 24 and 48 hours of incubation, respectively. The rapidly degradable fraction was 26.9 %; the slowly degradable fraction was 56.3 %; the degradation rate was 0.04317 %/h and the potentially degradable fraction was 83.1 %. Regarding previously studied plant species from the Paraná River islands, LP presented a ruminal degradation kinetics that was characterized by high degradable fractions (a, b and a + b) and an intermediate degradation rate (c). *Ludwigia peploides* can be defined as a forage with high ruminal degradability because it widely exceeded the 60 % limit, with a value of 73.5 % after 48 h of incubation.

A31

ASSESSMENT OF THE ANTITUMOR POTENTIAL OF CD8⁺ T CELLS INDUCED BY *TRYPANOSOMA CRUZI* INFECTION AGAINST THE B16-F10 CELL LINE

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Pathogen-specific T cells have been reported to recognize neoepitopes via cross-reactivity, leading to antitumor responses. Previous experiments for our group showed that both acute infection with *Trypanosoma cruzi* and infection treated with Benznidazole delay tumor growth in C57BL/6 mice challenged with B16-F10 cells. This study aimed to evaluate the contribution of CD8⁺ T cell cross-reactivity generated in response to infection to this effect. Adult female C57BL/6 mice were randomly divided into three groups: G1 received 500 *T. cruzi* trypomastigotes (Tulahuen strain) intraperitoneally 15 days before tumor challenge; G2 and G3 received adoptive transfer of 2×10^6 CD8⁺ T cells, isolated from spleens of infected and healthy mice, respectively, intravenously on the day of tumor challenge after positive selection with CD8a magnetic microbeads. All mice were inoculated subcutaneously with 200.000 B16-F10 cells.

Significant differences in tumor volume were observed between groups (*Kruskal-Wallis* test, $p < 0.05$; G1 vs. G3 and G2 vs. G3, $p < 0.01$ (day 22), *multiple comparisons test*). Interestingly, in G2, a population of CD8⁺ T cells specific for Tskb20⁺, an immunodominant epitope of *T. cruzi*, proliferated after adoptive transfer. However, targeting dendritic cells with an anti-CLEC9A antibody conjugated to Tskb20 and combined with the Poly(I:C) adjuvant (G4), showed no changes in tumor progression compared to immunization with the adjuvant alone (G5), a non-specific anti-CLEC9A antibody conjugated to Tskb20 (G6), or a control group without any immunization (G7). These results suggest that targeting a single epitope may not be sufficient to elicit a potent antitumor response, though it is evident that the antitumor effects of *T. cruzi* infection are at least partially mediated by CD8⁺ T cells.

A32

CREATION OF A SELECTION ENVIRONMENT FOR YIELD STABILITY IN PEA (*Pisum sativum* L.)

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Pea (*Pisum sativum* L.) production in Argentina expands the supply of extensive winter crops to be included in agricultural sequences, favoring more sustainable agriculture. INTA carries out a pea cultivar evaluation network, where new commercial varieties are evaluated and presented to producers. For a new variety to be successful, it is necessary not only to present good performance, but also to show high stability. The breeding program in agreement between the EEA INTA Oliveros and the FCA UNR seeks to expand the supply of commercial pea varieties with good agronomic performance. It is essential to make a correct final selection to determine which experimental varieties have the potential to become commercial and be included in the trial network. To achieve this, it is necessary to accelerate and reduce the costs of the final evaluations, carrying out precise tests, in a short time and with a low number of seeds available, that reflects the information obtained in the network of pea cultivars. The objective of this work was to create a selection environment for performance and stability formed by microenvironments and validate it with data from the INTA Network. These microenvironments consisted of 1 m² plots with two repetitions planted on four sowing dates, with and without irrigation, with fertilization (100 kg/ha of monoammonium phosphate) and without fertilization; and two planting densities (40 plants/m² and 80 plants/m²), obtaining a total of 32 microenvironments in the Experimental Field of the FCA of the UNR. Data from three campaigns were analyzed, in 10 locations in the south of Santa Fe and north of Buenos Aires, belonging to the INTA Network. The commercial varieties were Viper, Yams and Reussite. Yield per plot (g) was measured and stability was evaluated using the Francis Coefficient of Variation (CV), the Eberhart and Russell method (b and S²d), a GGE biplot analysis and the Shukla variance (σ^2) using the GEA-R program. It was determined that Viper was the most stable but had the lowest yield, on the other hand, Reussite and Yams were the most yielding and adaptable, but less stable both in the network and in the trial according to the CV and the GGE biplot analysis. The same results were obtained using the Eberhart and Russell method in the trial, but the coefficients were non-significant in the network. For the Shukla variance (σ^2), Viper was more stable in the INTA Network while Yams was more stable in the microenvironments. In conclusion, the selection environment formed by microenvironments is a good predictor of the stability and the performance of the evaluated materials.

A33

ASSESSMENT OF THE ANTITUMOR POTENTIAL OF CD8⁺ T CELLS INDUCED BY *TRYPANOSOMA CRUZI* INFECTION AGAINST THE B16-F10 CELL LINE

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Tskb20⁺, an immunodominant epitope of *T. cruzi*, proliferated after adoptive transfer. However, targeting dendritic cells with an anti-CLEC9A antibody conjugated to Tskb20 and combined with the Poly(I:C) adjuvant (G4), showed no changes in tumor progression compared to immunization with the adjuvant alone (G5), a non-specific anti-CLEC9A antibody conjugated to Tskb20 (G6), or a control group without any immunization (G7). These results suggest that targeting a single epitope may not be sufficient to elicit a potent antitumor response, though it is evident that the antitumor effects of *T. cruzi* infection are at least partially mediated by CD8⁺ T cells.

A34

IN SACCO RUMEN DEGRADABLE FRACTIONS OF LEAVES OF NATURALIZED MULBERRY

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The tree plant species commonly known as mulberry (*Morus* sp.) is native to the Asian continent, grows and spreads rapidly, and under favorable environmental conditions can become invasive, tend to naturalize and constitute a threat to biodiversity. There are records of its leaves being used for around 4500 years as a food source for silkworm larvae (*Bombyx mori*). Due to the possibilities of alternative uses derived from its edible fruits, wood and leaves as a forage resource for other animal species, this work proposes to assess the leaves of naturalized mulberry plants as a food source for small ruminants, in order to provide information on an exotic species that grows in our region and as an alternative to controlling its spread. The objective was to describe the degradable fractions in the rumen *in sacco* of leaves of naturalized mulberry plants and compare them with those of a cultivated variety. Mulberry leaves that grow naturalized (NAT) in the Florindo Donati protected area of the General San Martín Agricultural School Complex – Faculty of Veterinary Sciences of the UNR were used, and leaves of the Capióvi variety (CAPI), grown in the silkworm breeding module of the General San Martín Agricultural School, in the city of Casilda, Santa Fe, Argentina. Samples of mature and healthy leaves were obtained from NAT once a month between the months of February and May of this year (NAT - Feb, NAT - Mar, NAT - Apr and NAT - May), and from the cultivated variety Capióvi (CAPI - Mar) collected on the same date as NAT - Mar. The dry matter (DM) concentration was determined immediately after collection of the samples. The ruminal degradation kinetics of dry matter (DRISDM%) was determined for each sample using the *in sacco* technique. Nylon bags (pore size: 62 microns) were incubated with 3 g of DM (17 mg DM/cm²) of each sample for 0, 3, 6, 12, 24 and 48 h, during two periods, in the rumen of two Pampinta sheep provided with a ruminal cannula fed with alfalfa hay. Immediately after being removed from the rumen, the feed was washed with running water, dried at 60°C for 48 h and weighed to obtain the percentage of dry matter degradation. The DRISDM data were adjusted to the model of Orskov and Mc Donald (1979): $DRISDM\% = a + b(1 - e^{-ct})$, where a is the rapidly degradable fraction, b the slowly degradable fraction, c the degradation rate of b and a + b the potentially degradable fraction. The results were studied by ANOVA and Duncan test ($P > 0.05$). The DM % was in NAT – Feb 32.2; NAT – Mar 26.2; NAT – Apr 26.6, NAT – May 26.3 and in CAPI – Mar 25.6 %. For NAT – Feb, NAT – Mar, NAT – Apr, NAT – May and CAP – Mar fraction a was 20.78; 18.8; 19.02; 22.40 and 21.15 %, fraction b was 55.09; 57.83; 56.36; 48.27 and 62.24 %, fraction a + b 75.86; 76.64; 75.38; 70.67 and 83.39 %, and the degradation rate (c) was 0.143; 0.115; 0.091; 0.086 and 0.143 % / h, respectively. Although the potential degradability (a + b) was lower in the Naturalized mulberry compared to the cultivated Capióvi variety, all the values found are greater than 60 %, far exceeding the limit that defines a forage with high ruminal degradability.

A35

SOIL QUALITY OF ARGUJOL IN SOUTHERN SANTA FE: DEVELOPMENT OF AN INTEGRATED INDEX

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The study of soil quality is essential due to the dynamic and systemic nature of agricultural soils, which lack self-regulating properties to maintain long-term stability. Given the physical degradation of regional soils and considering that the Cultural Profile Index (CPI) is only one of the available methods for characterization, it is crucial to apply efficient field diagnostics to facilitate decision-making. This study aims to identify a minimum set of soil variables that make up the CPI and use them as tools to evaluate soil quality in agricultural systems through Principal Component Analysis (PCA). Sampling was conducted at 43 sites distributed across agricultural plots in southern Santa Fe, a region characterized by Argiudols soils. Sites were selected based on their crop rotation modules over a five-year period and their general management practices. At each site, three readings were taken per plot, collecting data on the following variables: Cover (Cob), Wheel Track (WT), Surface Crusts (SC), Residues (Res), Water Erosion (WE), Surface Compaction Layers (SCL), Roots (Rt), Structural Porosity (SP), and Biological Activity (BA). PCA was applied to reduce data dimensionality and assess the contribution of each variable to total variation. This approach identified key

components, with PC1 accounting for the largest proportion of variance (30.5%). The variables Cob, SC, Rt, SP, and BA emerged as the most relevant physical and biological characteristics for assessing soil quality. Using these normalized variables, a new PCA (PC1a) was performed to ensure equitable contribution from each variable. This component explained 51.2% of total variance and was selected as a soil quality index. The index was classified into five ranges: very low quality, low quality, moderate quality, high quality, and very high quality. This classification effectively evaluates soil conditions based on the most relevant variables associated with soil structure and functionality. Notably, SP, BA, and Cob had significant weights in determining quality (0.55%, 0.51%, and 0.43%, respectively), likely due to the prevalence of grasses in these crop sequences. This method established a solid technical basis for evaluating soil quality in a simple and practical manner, selecting a reduced but consistent set of variables that provide a better understanding of soil dynamics.

A36

THE RELEVANCE OF INTERACTION IN THE CONSTRUCTION OF SCHOOL ORAL HEALTH.

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In the process of conceptualizing care, dimensions such as interaction, participation, affection and ethics have been identified as essential in the act of caring. The concept of interaction as a basic element in health care is associated with characteristics such as empathy, respect, responsibility, communication, reciprocity. The family is the group where care is provided to its members both for the preservation of health and for its development. Health professionals must consider the family with their own care processes that are valid and validated by its members. The purpose is to describe the Health Disease Care Attention Process (PSEAC) of a school population under an oral health promotion program in relation to parental perception. It consists on a Longitudinal descriptive study. 81 children aged 8 years old were selected who participated in the program between the years 2019-2022 in four public schools in the city of Rosario, complying with ethical-legal requirements. The clinical evaluation was carried out according to WHO criteria by two calibrated examiners (Kappa 0.85). The ceo, CPO d and s, Restorative (IR) and O' Leary indices were used. 2% sodium fluoride was applied. Sociocultural and socioeconomic data were obtained through a self-administered questionnaire to the families, after two years of non-intervention. Statistical processing: Test of differences in proportions. The average parental age is 40 years, 39% reached the secondary educational level. Health coverage is represented by: Public Health 34%, Social Security 53% and Private 13%. 54% of the participants have formal employment. For 80% the program is considered satisfactory, highlighting the increase in the frequency of brushing in their children/children integrating it into their daily life. They state that they have no difficulties in maintaining oral health, on the other hand they say they have problems in accessing the health system "getting appointments", "little information for health care", "getting appointments by WhatsApp is very slow". They define the disease caries in relation to the signs they perceive. "Crooked teeth", "black teeth", "lack of cleanliness". The usefulness of brushing is meant in "cleanliness" and "prevention"; while the function of fluoride in "Protection, Strengthens, Hardens", 90% do not know where fluoride is located. Parents report that the link between professionals and schoolchildren was very good. The parents' statements are partially reflected in the results of the schoolchildren's diagnosis. At the beginning of the program, 64% of them had caries. In 2022, an increase of 78% was observed ($p=0.049$). The lack of caries experience was not related to the effectiveness of brushing ($p=0.72$). The IR increased in 2022 ($p=0.001$). In 2019, the average number of surfaces affected by caries was 1.69 and in 2022 it was 1.71 ($p=0.90$). No association was found between the economically active population and the experience of caries in schoolchildren ($p=0.47$). We received schoolchildren with a high prevalence of caries, the program managed to sustain the health of those without experience and the number of affected surfaces. It is necessary to rework health education with the family, given the difference between what they say they know and the reality of the PSEAC of schoolchildren.

A37

THE CONSTRUCTION OF THE TEACHING IDENTITY OF THE STUDENT ASSISTANT

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At the Faculty of Agricultural Sciences (UNR), students have access to teaching as student assistants (AS) through two figures: Student Assistant (unpaid) and Second Category Assistant (paid), whose functions are clearly defined in the norms (Resol. C.D. No. 547/15 and Resol. C.D. No. 246/21). The construction of professional identity in new teachers is a complex process in permanent transformation, regulated by norms and at the same time crossed by beliefs, myths, stories and symbols, among other individual and collective components. The objective of this research was to recognize

the emergent construction of professional teaching identity in the ASs who worked in the Animal Anatomy and Physiology cathedra during the years 2022 and 2023. The methodology, framed in the hermeneutic and critical paradigms, used the semi-structured interview technique with informed consent. The data collected, systematized in dimensions and attributes, were subjected to an interpretative analytical work. Out of a total of seven AS, it was determined that the theoretical saturation point was reached in the fifth interview. The main results show that in the personal dimension there were emergences related to motivation and the socio-affective aspect: *"I found it a very worthy profession"*, *"...it was the first subject that brought me closer to animals..."* and *"I always felt accompanied [...] since I joined the team I always felt very comfortable"*. In the professional dimension, components related to both agronomy and teaching emerged: *"When I participated in the practical's it helped me to learn to express myself in public"* and *"I liked when the classes were planned"*; also emerging related to disciplinary knowledge: *"...I was given the opportunity to participate in the case study on greenhouse gases with teachers of Animal Nutrition and Forages..."* and *"...I liked having participated in the semen analysis and in the practical of ruminal fluid"*. Likewise, the analysis showed that the Second Category Assistants experienced an identity construction more linked to the teaching practice than the Student Assistants, who were more interested in strengthening the knowledge of the disciplinary field applied to animal production in agronomic engineering. Beyond this difference in personal preferences, all the interviewees complied with the norms: *"... the norm is correctly formulated, since it states that assistants must participate in tasks related to teaching and research"*. Finally, the expressions of the ASs evidenced a valuation of the professionalization of teaching in accordance with the thinking of the cathedra: *"...I liked the performance of the professors and the course of the subject..."*, *"The assistantship was an experience that brought me closer to teaching..."* and *"...I saw it as an opportunity to continue learning and training."* In conclusion, it can be seen that the construction of teaching identity in ASs is characterized by being dynamic and heterogeneous, as it involves several personal, social and professional components that never happen once and forever.

A38

WHAT IS THE BEST SOLVENT TO EVALUATE NATURAL COMPOUNDS THAT ACT ON GERMINATION OF *BOTRYTIS CINEREA*?

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Botrytis cinerea is a globally distributed polyphagous fungus that affects economically important crops such as blueberries, kiwi, grapevine, strawberry, and tomato. This phytopathogen is primarily controlled with fungicides, but alternative control methods have led to testing organic compounds with potential antifungal activity. Many require dissolution in organic solvents like dimethyl sulfoxide (DMSO) and methanol for laboratory testing. This study evaluated the impact of DMSO and methanol on *B. cinerea* spore germination. Spores were collected from cultures grown on Czapek Yeast Extract Agar (CYA) for 7–10 days at 24°C and diluted in water to 1×10^4 spores/mL. Since most spores did not germinate in water, a final protocol used 20% potato dextrose broth. Treatments included a control (no solvent), 2% DMSO, and 2% methanol. Each treatment had three replicates of 20 μ L spore suspensions, incubated at 15°C in humid chambers for 16 hours. Germination was assessed by counting 100 spores per replicate, and germ tube length was measured. Mean germination rates (\pm SD) were 98.48% (\pm 1.86) in the control, 91.97% (\pm 1.28) in DMSO, and 98.37% (\pm 0.54) in methanol. The statistical analysis showed that the spore germination was significantly lower in DMSO, while methanol did not affect the germination percentage. Germ tube length averages (\pm SD) were 58.67 μ m (\pm 36.28) in the control, 47.05 μ m (\pm 22.18) in DMSO, and 57.84 μ m (\pm 38.49) in methanol. ANOVA and Tukey's test confirmed that DMSO significantly reduced germ tube length compared to both the control and methanol. In conclusion, at the tested concentrations, DMSO negatively affected *B. cinerea* spore germination and germ tube elongation, while methanol had no significant effect. These findings suggest that DMSO interferes with early fungal development, inhibiting spore germination and subsequent germ tube elongation.