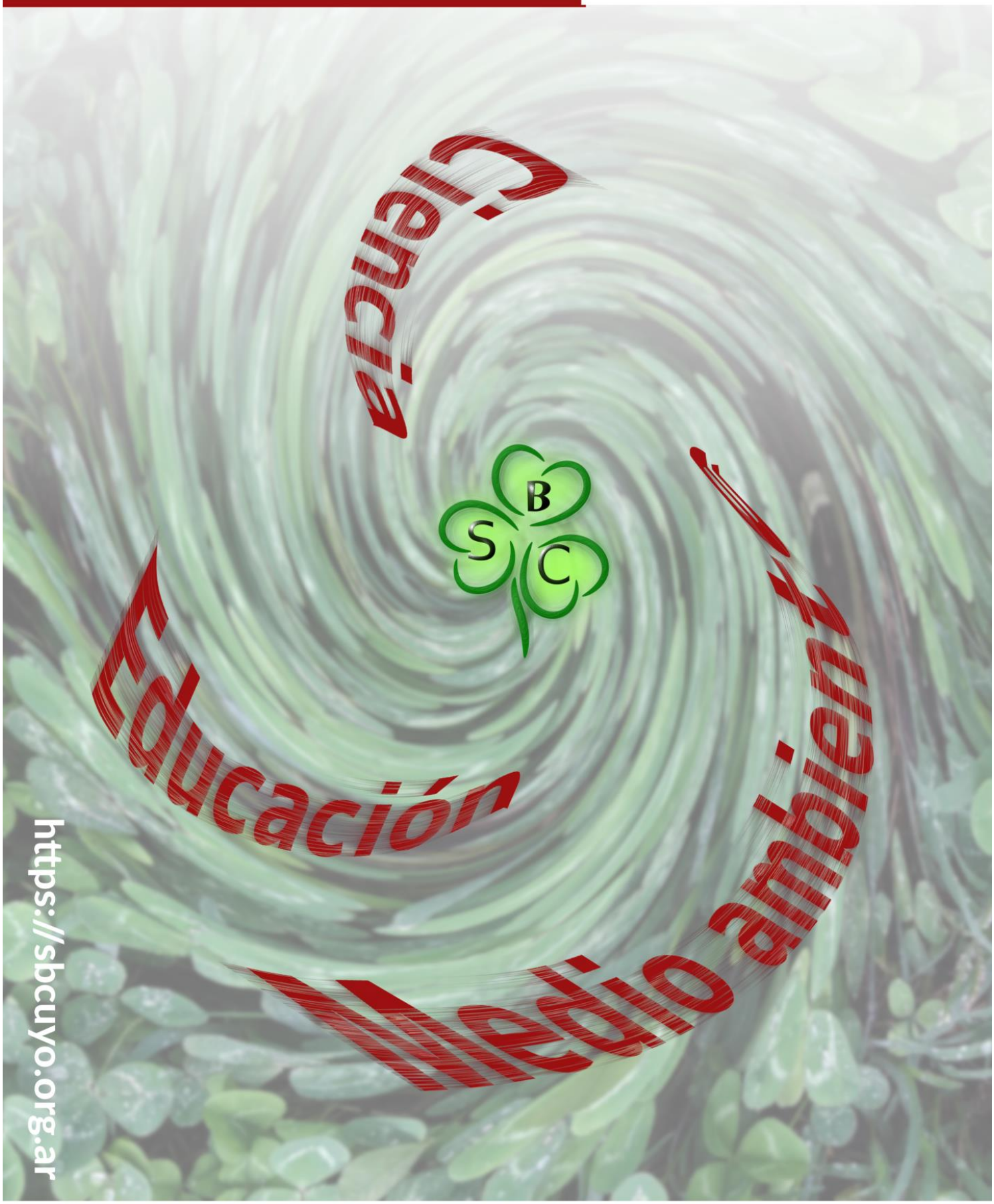
Sociedad de Biología de Cuyo

XXXVII Reunión Científica Anual

5 y 6 dic 2019 - San Luis



Libro de Resúmenes

XXXVII Reunión Científica Anual

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5 y 6 de Diciembre de 2019

Centro Cultural José La Vía

Avenida Lafinur esquina Avenida Illia
San Luis
Argentina

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Any alteration of homeostatic stability is a stressful situation for living beings. This alteration triggers physiological changes in response to a stress situation. In birds this response is related to the release of glucocorticoids. Glucocorticoids influence the function of several tissues. Although there are a large number of studies that have investigated histological alterations of glucocorticoids in mammals, the knowledge of this area in birds is limited. The main glucocorticoid in birds is corticosterone (CORT). In previous experiments our research group found a marked relationship between treatment with CORT and an increase in the heterophil to lymphocyte index (H/L), an indicator of stress in birds. We found a decrease in body mass when the birds were treated with CORT; however, the intestine mass was not affected by CORT treatments. The objective of this work was to determine histological alteration in the intestine of *Passer domesticus* in response to different doses of exogenous CORT. To achieve our goal, 16 sparrows were acclimated to a laboratory condition with water and food *ad libitum*, them separating randomly in four groups and each group were exposed to a different concentration of CORT in drinking water *ad libitum* (control, 20, 40 and 80 mg/l) for 72 hours emulating a long-term stress situation. After the exposition the intestine was removed and a portion of proximal section was fixed in Bouin solution. Then the intestinal pieces were dehydrated and embedded in paraffin. Histological studies were performed on 5µm sections, stained by hematoxylin-eosin coloration, and examined by a light microscope. A morphometric analysis was performed using the software Image Pro Plus 5.0. The measured parameters were: intestinal perimeter, muscle layer, mucosa thickness, crypt width, villus width and villus height. The data were statistically analyzed by ANOVA with Tukey post-hoc test ($p<0.05$). Our results showed a proportional increase in the H/L index in concordance with CORT treatments. The crypt width significantly decreased in birds exposed to 80 mg/l of CORT. However, the other parameters did not show significant variation. In conclusion the effect of CORT in the H/L index checks the effectiveness of the treatment. The decrease in the width of the crypts could be related to an effect at the level of enterocyte renewal. This fact may indicate the first event of a histological alteration in the intestine of *Passer domesticus*. Supported by CyT-UNSL PROICO 2-0516 and FONCYT PICT-201–0595.

128. DETERMINATION OF CHEMICAL AND PHYSICAL QUALITY IN MEAT FROM HEAVY LAMBS

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Ovine meat production in central region of Argentina is profitable activity and allows faster return on investment than cattle breeding, however is a secondary production with low meat consumption per head. Promote the production of heavy lamb will allow increase the consumption by sale in cuts. Breed is a factor that affects the physical and instrumental quality of meat. The objective of this work is to evaluate the influence of two racial biotypes in heavy lambs on the physical and instrumental characteristics of meat. Twenty male lambs were studied, 10 from Corriedale breed (C) and 10 from Hampshire Down (HD). Weaning was carried out at 19-20 kg of live weight; then lambs were fed for 60 days on grazed in oats, alfalfa hay and supplemented with corn (220gr/animal/day). Sacrifice was made between 31-36 kg of live weight, after 12 hours of rest and fast. Hot carcass weight (HCW) was determined and after 24 hours at 0-4°C cold carcass weight (CCW) was taken. Temperature and pH were measured in left *Longissimus dorsi* (LD), (5th-10th rib) at 3 times post sacrifice: 0 hour, 45 min. and 24 hours. Left LD muscle samples (5th-13th rib) were taken to determine color by colorimeter, cooking losses (CL%), water retention capacity (WRC%) and tenderness with Warner Bratzler shear forces. Statistical analysis was performed using ANOVA. The results show average HCW values were 14.11 ± 1.38 kg in C and 14.00 ± 0.86 kg in HD and CCW 13.82 ± 1.44 kg in C and 13.59 ± 0.75 kg in HD. Chemical and physical determinations of meat quality did not showed significant differences between breeds in the majority of the analyzed parameters. Both genotypes presented pH 24 hours values above the optimum (5.6-5.9); therefore factors pre and post-slaughter should be evaluated. Tenderness results were acceptable according to standardized values (below 4.5). These meats showed lower values of WRC and CL than those observed in other studies. The color indicator a* showed significant differences between biotypes ($p<0.05$), C exhibited higher values than HD. Racial type only influenced meat color, where C lambs showed a more reddish color than HD; the rest of meat quality characteristics evaluated were not affected by breed type and both exhibited acceptable meat quality values.

129. APOPTOSIS IN PITUITARY PARS DISTALIS OF MALE VISCACHAS: QUANTITATIVE ANALYSIS DURING THE REPRODUCTIVE CYCLE

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Apoptosis, or programmed cell death, is a genetically controlled cell process whereby cells induce their own death in response to certain stimuli. The balance between this process and cell proliferation is key to maintaining tissue homeostasis in pituitary gland during physiological endocrine events. A series of cysteine-dependent proteases, called caspases, participate in the intracellular mechanisms involved in apoptosis. The aim of this work was to localize and quantify apoptotic cells that express cleaved caspase 3 (CASP3) in different regions of pituitary pars distalis (PD) of adult male viscachas during their annual reproductive cycle (reproductive, gonadal regression and gonadal recovery periods). In each period, four pituitary glands were collected and processed for light microscopy. CASP3 was detected by immunohistochemistry and morphometrically quantified by image analysis. The immunoreactive

(-ir) cells were counted and expressed as percentage of the total number of cells per microscopic field. The values were statistically analyzed and expressed as mean ± SEM. The immunostaining pattern was mainly cytoplasmic, although nuclear labeling was also observed. Abundant CASP3-ir cells were located around blood vessels. The total percentage of these cells did not differ significantly among the three periods studied ($P>0.05$). However, there were significant differences in CASP3-ir cells between different PD zones during reproductive cycle. In reproductive period, numerous CASP3-ir cells were mainly located at the rostral end, in the ventral and dorsal regions ($P<0.01$). Few positive cells were found at the ventral region of PD ($P<0.05$) during gonadal regression period. In recovery gonadal period, the percentage of CASP3-ir cells did not differ significantly ($P>0.05$) in different PD zones. In addition, each of different zones of PD was compared throughout the reproductive cycle. The percentage of CASP3-ir cells increased significantly at the rostral end, and it decreased significantly at the caudal end and dorsal region in reproductive period compared with gonadal recovery period ($P<0.05$). In ventral region, the percentage of CASP3-ir cells was significantly higher ($P<0.01$) in gonadal recovery period compared with gonadal regression period. The results obtained demonstrated that there are regional variations in the expression of CASP3 throughout the reproductive cycle in the PD parenchyma of male viscachas. These differences might be due to a differential distribution of proapoptotic factors that reach the PD through the blood vessels of the pituitary hypothalamic portal system. It is likely that in the reproductive period, these factors mainly affect the rostral end and then be distributed to other PD zones. The changes in apoptosis rates are probably related to the maintenance and cellular renewal processes and to the variation hormonal secretion of different cell populations depending of the physiological demands of this rodent throughout the year.

130. IMMUNOHISTOCHEMICAL STUDY OF THE PROLIFERATIVE ACTIVITY IN THE MALE AND FEMALE GONADS OF VISCACHA

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The proliferating cell nuclear antigen (PCNA) is an essencial regulator of the cell cycle and has been used as a marker of proliferating cells in several studies. The viscacha (*Lagostomus maximus maximus*) is a wild South American rodent with nocturnal habits and seasonal reproduction. The objective of the present work was to study the PCNA expression in ovary and testis by immunohistochemistry, relating the results with the animal sexual maturity. The animals were captured in their habitat near San Luis city between 2013 and 2018. The females and males were classified into mature (>3 kg, 5-7 kg, respectively) and immature (< 3 kg, 1-4 kg, respectively), according to their corporal weight and the light microscopy observations of the gonads. The testicular and ovarian samples were surgically removed and processed for optical microscopy. Ovarian and testicular structures were identified by optical microscopy and the percentage of inmunopositive cells was determined. In females, immunostaining was observed in several granulosa and in few theca cells. The higher percentages of PCNA-positive cells were observed in granulosa cells of multilaminar primary follicles (40.02±2.89) and unilaminar primary follicles (22.26±1.17) of mature viscachas in relation to those observed in immature animals (18.18±1.84, 14.81±1.17 respectively). In male viscachas, the immunostaining was observed only in germinal cells, while the Sertoli cells were negative for PCNA-immunodetermination. The percentage of PCNA-positive cells in the seminiferous tubules was significantly higher in adults (29.75±0.68) than in immature animals (7.36±0.47). The immunostaining was moderate in the germinal and interstitial cells of studied groups. Our results showed that proliferative activity in female and male gonads develops in different cell types. In females, the highest proliferative activity is found in granulose cells while in males it is observed in germ cells. In addition, the adult animals showed a greatest proliferative activity in relation to that observed in immature animals. These results suggest that the cell proliferation observed in the gonads, both male and female, ensures the maintenance of the gonadal structure and function during the animal reproductive life, thus ensuring the reproduction and species survival.

EDUCACIÓN Y EXTENSIÓN (131-158)

131. VALORACIÓN DE UNA EXPERIENCIA DE APRENDIZAJE APOYADA EN LA PLATAFORMA MOODLE

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En este trabajo, se relata una experiencia de enseñanza - aprendizaje con apoyo de una plataforma MOODLE en la Asignatura Dimensión Psicológica de la Atención Odontológica, implementada en el ciclo lectivo del corriente año. Este curso, pertenece al segundo año de la Carrera de Odontología y es de carácter cuatrimestral. El objetivo fue promover la integración de contenidos, el análisis fundamentado de casos clínicos simulados y la aplicación de los conceptos teóricos en situaciones reales. Se trató de valorar el proceso de aprendizaje más que la calificación. Desarrollamos actividades presenciales y virtuales integradas que tenían una instancia en aula con discusión en pequeños grupos y una producción individual para entregar en forma virtual. El trabajo grupal presencial reforzaba el aprendizaje colaborativo mientras que las actividades asincrónicas pretendían promover en los participantes el desarrollo de habilidades comunicativas del lenguaje y el razonamiento crítico. Obtuvimos la valoración de la experiencia mediante un cuestionario que fue respondido por 54 estudiantes (de un total de 156), los cuales calificaron su nivel de satisfacción con las actividades del curso, con un promedio de 7,6 ± 1. La mayoría de los estudiantes tenía conocimiento de los objetivos aunque un 33% dudó o no los conocía. En general utilizaron el material complementario y las actividades no les resultaron difíciles aunque asintieron que el trabajo en grupos les facilitó la resolución. Se entusiasmaron con el análisis de casos clínicos simulados y valoraron la relación profesional- paciente. El 74% hizo las tareas virtuales para obtener una buena calificación. Un 60% de alumnos prefiere corregir la tarea para mejorar la calificación mientras que el resto no está de acuerdo o le resulta indiferente. Un 85% de los estudiantes cree que la explicación del profesor es más