Influence of enrichment diet on Immune System of Caiman latirostris

Ana P. Mestre^{1,2}, Pamela M.L. Leiva^{1,3,4}; Patricia S. Amavet^{*2} Carlos I. Piña^{1,3,4}; Marcela A. González⁵ and Melina S. Simoncini^{1,3,4}

¹ Proyecto Yacaré - Laboratorio de Zoología Aplicada: Anexo Vertebrados (FHUC-UNL /MASPyMA) - Aristóbulo del Valle 8700, CP 3000 Santa Fe, Santa Fe, Argentina (anapaulamestre@yahoo.com)

²Laboratorio de Genética, Departamento de Ciencias Naturales (FHUC - UNL), CONICET, Santa Fe, Argentina, (pamavet@fhuc.unl.edu.ar).

³CICyTTP-CONICET/Prov. Entre Ríos/UADER, España 149, CP. 3105, Diamante, Entre Ríos, Argentina (pameleiva4@gmail.com; cidcarlos@infoaire.com.ar; melinasimoncini22@yahoo.com.ar). ⁴Facultad de Ciencia y Tecnología, Universidad Autónoma de Entre Ríos, Tratado del Pilar 314 CP 3105, Diamante, Argentina.

⁵Cátedra de Bromatología y Nutrición, Departamento de Ciencias Biológicas, Facultad de Bioquímica y Ciencias Biológicas-Universidad Nacional del Litoral (FBCB-UNL). Ciudad Universitaria. Paraje el Pozo S/N. CP. 3000 Santa Fe, Santa Fe, Argentina (maidagon@fbcb.unl.edu.ar).

Abstract: Diet enrichment with omega-3 and antioxidant sources have become frequent in farming of animals. These diets beyond improving meat quality, could benefit animals' health during captivity. Reptile immunology involves cell-mediated and humoral components and their study can be a good indicator of health condition of this animals. Our objective was to evaluate the effects of diet enrichment with flaxseeds and thymol fed during 30 days, on total (TWBC) and differential (DWBC) white blood cell count as well as Heterophils/Lymphocytes (H/L) index and Natural Antibodies (NABs Titres) in Caiman latirostris blood. Animals were raised in plastic trays and fed 3 times a week with experimental diets: Control Diet (C), C+Flaxseed (F), and C+T+F (TF). Although the higher values for TWBCC were found in treated animals (F and TF), we did not find statistical differences respect to C. However, when we evaluated the DWBCC, were found a decline of monocytes/mm³ (p=0.043), of eosinophils/mm³ (p=0.002) and of lymphocytes/mm³ (p=0.05) in TF respect to C animals, with an increase of heterophils/mm³ in these treatments. Furthermore, F treatment showed low values for those leucocytes populations respect to C, being different for monocytes/mm³ (p=0.043). Moreover, H/L index, as well as the others leucocytes types analyzed values, showed no differences among treatments. NABs showed higher titres in animals feed with diet enrichment related to C, being statically significant for F treatment (p=0.035). The decreases in some types of white blood cells such as eosinophils and moconocytes in peripheral blood of F and FT caimans, which especially have allergic functions, show lack of reactivity towards enriched diet components. In addition, both the decrease in lymphocyte populations with increases in heterophils, as well as the increase in antibody titers in the animals fed with enriched diet, could suggest an improvement in the immune system of these animals.

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